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FAMILY EXPENDITURE IN 1947

PART I: INCOME & EXPENDITURE OF NON-FOOD ITEMS

(1) INTRODUCTORY

Our concluding survey of working-class household expenditure in the series started by us in 1940, was undertaken in the summer of 1947. Its main results will be set out in this and a subsequent paper. Unfortunately, though very understandably, it was not possible to enrol for an indefinite period all the housewives and the voluntary helpers who enabled us to carry through this survey; but a proportion of them have assured us of their willingness to co-operate for at least another few years. The accounts supplied by them will have to be considered outside the series. They may provide some useful hints on the structure of the patterns of family expenditure until we can again undertake a survey on a somewhat larger scale.

With reference to the size of our samples, large and small are only relative terms. Actually all the samples taken by us were very small, the largest number of families that contributed household accounts to our survey in any single year being 226, in 1944; in 1947 we obtained accounts from 163 families. Our annual samples were not random, since they were collected with the assistance of university teachers, wardens of Settlements, and other people with social interests, from families with whom they already had or could easily establish contacts. In each case the household account was kept by the family for a consecutive fortnight during the summer, mostly in June and July[1]; this was found to be the longest period for which housewives were willing to co-operate repeatedly, and the shortest of any practical use for our purpose, accounts for one week only being too unreliable.

The smallness and the selectiveness of our sample suggest grave shortcomings from a statistical point of view. However, to collect a random sample of household accounts from one particular type of family is practically almost impossible, since it would necessitate an extremely costly sampling machinery, and it seems very doubtful whether, even if the money for such an undertaking could be found, the improvement in the data would justify the expenses. For the data derived from our small samples have corresponded remarkably well to related data based on more specific samples that were very much larger. It is, of course, possible that the general restrictions on purchases during the war years and the early post-war years, and in particular the rationing of food, by superimposing some general pattern of expenditure upon the purchases of all families, made the small sample more significant than it would have been under more normal conditions. If this was the case the fact should emerge from later inquiries, when increasingly free markets may open a wider outlet for the consumers' demand.

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[1] Except in 1940, when two inquiries were undertaken, the first one in May and the second one in October.

(2) An Outline of the Sample

(*a*) *General*

Our samples were obtained from families of urban workers with at least one dependent child; this latter qualification, however, was waived in all those cases where a dependent child had been in the family when a household account was supplied to us for the first time but where the child had since outgrown school age and become an earner. No family was included that had boarders living with them and paying more than 35 shillings a week, *i.e.*, more than one might expect to be normally paid by a grown up son or daughter. The fact that the accounts were collected each year from 12 or more different towns does not affect the expenditure pattern of the families; accounts from families living in the same town were found to vary as much as accounts from families in different towns[1].

Of the 163 families that contributed a household account in 1947, 83 were *new* ones, *i.e.*, families that had contributed no account in 1946 although some of them had supplied one in earlier years. Comparable accounts for 1946 and 1947 were returned by the remaining 80 families, 55 of which were *unchanged* and 25 *changed*, the structure of these latter families being different in some way in 1947 from that in 1946.

(*b*) *Geographical Distribution*

The towns from which the accounts came and the number of accounts from each town are shown in Table I, which also gives for the sample from each town the average number of persons per family and the average outlay per ' man ' per week on food. The average outlay on rent (including rates), and on fuel and lighting, are stated per family per week, since these costs represent primarily a charge on the family and are little affected by changes in its structure, at least in the short run. The families have been standardized by means of the scale of ' man ' values given in Tables II. These ' man ' values have been assumed to measure approximately the cost of maintenance of each member within the family. The average ' man ' value per person in our Tables thus provides some indication of the average structure of the families, low average ' man ' values pointing to families with a large proportion of young children and high ' man ' values to families with a large proportion of adults and older children. As regards the outlay on food, rent, and fuel and lighting, the accounts from each town cover a wide range, and

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[1] In a few instances, however, the accounts from one town differ from those of another in that some were obtained through welfare workers dealing mainly with large families with growing children, while the others were collected by teachers, club-leaders, etc., having contacts with families of various sizes.

TABLE I

Geographical Distribution of Families

	Un-chgd.	Chgd.	New	Total	No. of Pers. per Fam.	'Man' Value per Pers.	Food per 'Man' p. Wk.		Rent[1] per Fam,		Fuel and Lightg. p. Wk.	
	Number of Families						s.	d.	s.	d.	s.	d.
(1) Birmingham ...	9	1	4	14	4.9	0.77	15	9¾	11	11	6	11¾
(2) Bolton ...	—	—	13	13	3.8	0.76	18	0½	10	9	9	9¼
(3) Glasgow ...	2	4	20	26	4.8	0.71	15	10¼	10	11	8	11¾
(4) Leeds	4	2	7	13	4.9	0.78	14	7¼	15	6	7	5
(5) Liverpool ...	10	6	13	29	5.9	0.78	14	4	13	11¼	9	3
(6) London ...	3	2	—	5	5.4	0.77	19	7¾	16	1¾	10	1
(7) Manchester ...	4	2	4	10	5.8	0.76	14	0¼	13	1¾	8	0½
(8) Newcastle ...	2	—	7	9	4.8	0.79	16	2	14	11	12	3
(9) Oxford	2	2	1	5	6.0	0.77	12	0	15	1¼	9	5
(10) Reading ...	—	—	5	5	5.8	0.73	13	11½	9	0	5	11
(11) Sheffield ...	3	4	3	10	5.3	0.78	14	10¾	11	5½	7	9¾
(12) Southampton ...	11	—	6	17	4.3	0.80	16	8	20	3½	9	3½
(13) Swindon ...	5	2	—	7	3.7	0.83	15	10¼	—		7	8¾
Total 1947 ...	55	25	83	163	5.0	0.77	15	4½	13	3[2]	8	9¼
Total 1946 ...	59	24	68	151	4.8	0.77	15	0¼	12	5¾[3]	8	1½

[1] Excluding the following 30 families living rent free or buying or owning their houses and paying rates and mortgage charges : Bolton, 8 ; Leeds, 1 ; Liverpool, 1 ; Manchester, 1 ; Newcastle, 2 ; Southampton, 10 ; Swindon, 7.

[2] Average expenditure of 133 families. [3] Average expenditure of 132 families.

TABLE II

Household Expenditure Scale of ' Man ' Values

Male, 15 years and over	1.00
Female, 15 years and over	0.85
Children : 10 to 14 years...	0.70
6 to 9 years	0.60
3 to 5 years	0.50
under 3 years	0.33

the averages in Table I although broadly defining the samples from the different towns, are not representative of the general pattern emerging from our survey.

The general structure of our samples for 1947 is compared with that for 1946 in the two bottom rows of Table I. Twelve more families supplied accounts in 1947 than had done so in 1946. The ' man ' value per person of all the families was the same in 1946 and in 1947, but the number of persons per family was slightly larger in 1947.

(*c*) *The Economic Outline*

In comparing the standard of living of the families of our sample we employ the data of outlay on food per ' man '. This, in our experience, constitutes a gauge much superior to the corresponding figures of total household outlay, which are partly dependent on the range of purchases delegated by the earners of the family to the housewife. The household outlay of a family may be small because the family is poor, but it may also be small because the purchases of the housewife cover little else but food, the earners paying direct for most of the other household requirements, such as coal, gas and electricity, clothing, etc. Thus in the absence of full information on income—and only 67 out of the 163 families recorded their total income—standardized expenditure on food is the most satisfactory quantitive measurement that can be applied for the purpose.[1]

Table III sets out the families of our sample according to their food expenditure per ' man ' per week, comparing the distribution of families and of persons in the several ranges of food expenditure in 1946 and 1947, the data for 1946 being printed in *italics*. Besides the outlay per ' man ' on food Table III gives the household outlay per ' man ' per week, for each of the ranges of food expenditure; these figures include the outlay on food but exclude all outlay on housing, *viz.*, on rent, rates, and mortgage and house purchase charges, since these expenses cannot be modified by the family at will, as is possible with most other household expenses. Thus, while the amount of money disbursed on items other than housing is partly determined by the family's general standard of living, that standard of living itself may be partly determined by the outlay that has to be incurred for housing.

In comparing the data in the several ranges of food expenditure in Table III, it will be seen that the differences in the average household outlay are

TABLE III

Expenditure on Food Compared with Household Expenditure

1947 Outlay on Food p. 'Man' p. Wk.	*1946 Number of Fams.*	*Pers. p. Family*	1947 Number of Fams.	Pers. p. Fam.	' Man ' Value p. Pers.	Food per ' Man '		Hsehd.* *exclg. Housg.* p. Wk.		Rent† p. Fam. p. Wk.	
						s.	d.	s.	d.	s.	d.
Under 10s.	*2*	*5.0*	6	7.0	0.75	9	7¾	18	2½	12	1¾
10s.—11s.	*9*	*7.9*	5	6.6	0.77	10	7½	21	4¼	11	7¾
11s.—12s.	*9*	*6.7*	7	7.1	0.74	11	7¼	19	4¼	13	0¾
12s.—13s.	*15*	*4.9*	11	6.4	0.77	12	5½	24	11¼	14	1
13s.—14s.	*25*	*5.0*	17	5.1	0.76	13	6¾	25	7¾	14	9
14s.—15s.	*16*	*4.7*	19	5.8	0.76	14	5	24	11	11	10½
15s.—16s.	*10*	*4.2*	23	4.9	0.76	15	5½	29	0½	13	10¼
16s.—17s.	*16*	*4.4*	18	4.8	0.75	16	4¾	34	1¼	14	2
17s.—18s.	*15*	*4.3*	18	4.5	0.80	17	6½	34	8	13	9¾
18s.—19s.	*10*	*4.2*	12	3.9	0.78	18	7	34	10¾	13	1
19s.—20s.	*10*	*4.5*	8	3.5	0.80	19	5¾	34	1¼	12	7
20s.—21s.	*3*	*3.3*	6	3.7	0.77	20	4½	38	0¾	11	7¼
21s.—22s.	*3*	*4.0*	8	3.5	0.81	21	5¾	42	11¾	10	7¼
22s. and over	*8*	*3.3*	5	3.6	0.81	25	10	42	5¼	14	7¼
	151	*4.8*	163	5.0	0.77	15	4½	29	0½	13	3‡

*Including outlay on food but excluding outlay on rent, mortgage and house purchase charges, and rates.

†Excluding 30 families living rent free or buying or owning their houses and paying rates and mortgage, etc. charges, in the following groups of food expenditure: Under 10s., 1 family; 10s.—11s., 1 family; 11s.—12s., 1 family; 12s.—13s., 2 families; 13s.—14s., 1 family; 14s.—15s., 3 families; 15s.—16s., 6 families; 16s.—17s., 2 families; 17s.—18s., 7 families; 18s.—19s., 2 families; 19s.—20s., 1 family; 20s.—21s., 2 families; 22s. and over, 1 family.

‡Average for 133 families.

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[1] Certain items of food and in particular meals out, are also bought out of the money retained by earners. As far as that was possible we have ascertained the outlay on meals bought by the earners and have included it in our figures of outlay on food.

often much wider than the differences in the outlay on food, but that they by no means always coincide with differences in that outlay. In part these discrepancies may be due to the indeterminateness of the range of household expenditure, which we discussed above; yet since this disharmony is evident for the relatively large central groups in Table III as well as for the smaller groups, it suggests some degree of interchangeability between food and non-food items according to individual preferences.

The last column in Table III gives the weekly outlay on rent per family. As in Table I the figures under this heading are derived from the accounts of 133 of the 163 families, the cost of all other forms of housing having again been omitted in order to obtain a picture of the average prices paid for rented accommodation. Expenses on all other forms of housing are complex; when a home is being bought, the hire-purchase charges represent partly savings[1]; when a house is owned, its use represents de-savings; housing supplied free of charge by an employer constitutes part of the wages, and should be offset against it.

Diagram A represents the distribution of the families and of the persons according to their expenditure on food per ' man ', by means of cumulative frequency curves. The total number of the families (163) and of the persons (818) have each been equated to 100, and the range of standardized food expenditure for any proportion of them can be read off from the Diagram.[2]

The medians and the quartiles of the distributions are compared with the corresponding data of our sample for 1946 in Table IV. In Table I we saw that the average expenditure on food per ' man ' per week of all the families was 15s. 4½d. in 1947 as against just over 15s. in 1946. We now find that for the two samples the differences in the patterns of food expenditure were greater than is suggested by these figures, for the medians for the two years relating to the families differ by 9d. per ' man ' per week and those relating to the persons by 11½d. per ' man ' per week, the gaps narrowing down in the last quartiles, to only 1½d. with respect to the families, while with respect to the persons the difference between 1947 and 1946 becomes even negative (–2½d.).

TABLE IV

Distribution of Food Expenditure per ' Man ' per Week in 1946 and 1947

	Total Number of		Median		Q_1		Q_3	
	Families	Persons	Families	Persons	Families	Persons	Families	Persons
1946	151	727	14/10	14/2	13/1	12/8	17/9	17/6
1947	163	818	15/7	15/1½	13/8¾	13/1½	17/10½	17/3½

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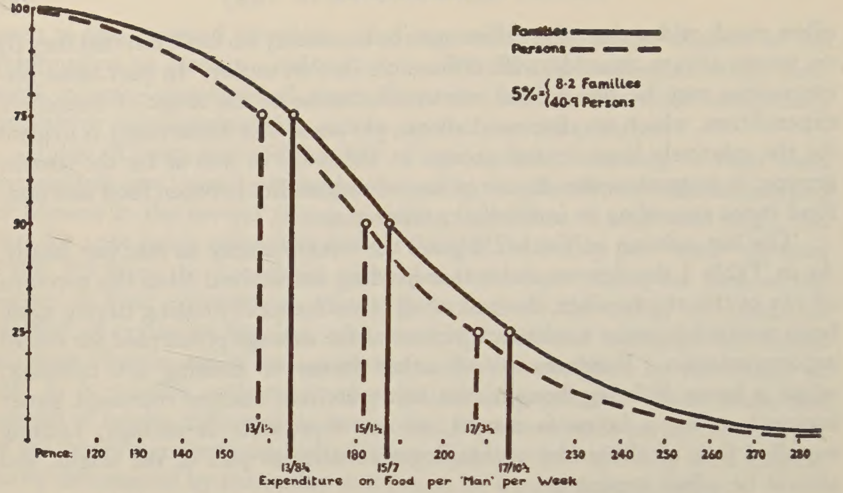
[1] To what extent the money invested in a house represents genuine savings depends on the price paid for it. If that price is inflated owing to a temporary shortage of housing accommodation, part of the purchase money will be current expenditure and part of the future commitments incurred by the buyer are actually borrowing for present consumption.

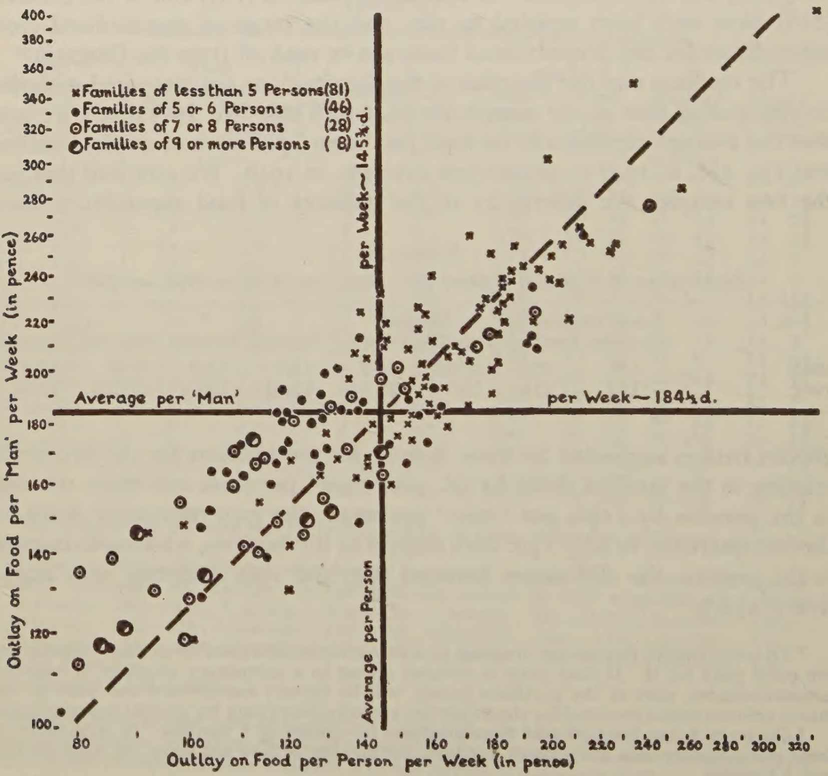
[2] Diagram A has been plotted from averages for groups of 5 families. In order to fit it more conveniently into the page it has been cut so that it does not show the data for the last 3 families.

DIAGRAM A



Cumulative Frequency Curves of Families and of Persons in Relation to their Expenditure on Food

DIAGRAM B



Food Expenditure and Size and Structure of Family (Logarithmic scales)

(*d*) *Structure of the Families and their Standard of Living*

The economic outline of our sample that is broadly sketched in Diagram A is filled in in some detail in Diagram B, which reveals at a glance the approximate size and the approximate structure of each of the 163 families, together with their weekly outlay on food per ' man ' and per person. All the families lying along any horizontal in Diagram B had the same outlay on food per ' man ', while all the families lying along any vertical had the same outlay on food per person, the dispersion of the families along these lines arising, of course, from the differences in their average structure as expressed in their ' man ' values per person. Diagram B is drawn on logarithmic scales; all the families having the average ' man ' value per person of the total sample, of 0.77, will therefore be found along the diagonal that bisects the two lines of average weekly cost of food per ' man ' and per person (15s. 4½d. and 12s. 1¾d). The vertical distance from the diagonal measures the percentage by which the ' man ' value per person of any family exceeds, or falls short of, the average value of 0.77, families with a higher value than this lying below and those with a lower value lying above the diagonal.

The families as shown in Diagram B are divided into four groups, the largest one, representing nearly 50 per cent of all the families, being composed of families of less than 5 persons. The next group, consisting of families of from 5 to 6 persons, amounted to about 28 per cent of the total, the following, of families containing from 7 to 8 persons, took up about 17 per cent, while the remaining 5 per cent was made up of families of 9 and more persons.

Some of the larger families included a high proportion of adults and hence their 'man' value per person was above the average value, but most of the families containing 5 and more persons comprised more than the average proportion of young children, and their ' man ' value per person was less than the average 'man' value per person of the whole sample.

Table V surveys the structure of the families of our sample by setting out the persons in age and sex groups. The change in the average structure of the *unchanged* families from 1946 to 1947 reflects the advancement of some of the persons of these families into a higher age group. The total number of persons of the 25 *changed* families increased from 1946 to 1947 by twelve,

TABLE V

Average Structure of Families

	Age Group	Unchanged Families (55)		Changed Families (25)		New Fams. (83)	All Fams. (163)
		1946	1947	1946	1947	1947	1947
Males	18 & over	1.09	1.09	1.32	1.48	1.13	1.17
Females	18 & over	1.09	1.13	1.52	1.76	1.13	1.23
Males	16—17	0.07	0.11	0.20	0.16	0.17	0.15
Females	16—17	0.22	0.25	0.24	0.40	0.17	0.23
Children	6—15	1.47	1.50	1.12	1.08	1.57	1.47
Children	Under 6	0.70	0.56	0.72	0.72	0.93	0.77
Persons per Family		4.64	4.64	5.12	5.60	5.10	5.02
' Man ' Value per Person		*0.76*	*0.78*	*0.80*	*0.80*	*0.75*	*0.77*

six of which were infants under a year old. In 1947, the *unchanged* and the *new* families had per family about the same number of children between 6 years and 15 years old, as well as about the same number of females aged 18 years and over, the main differences in their size and structure arising from the substantially larger number per *new* family of children under 6 years old.

(*e*) *The Pattern of Household Expenditure*

In dealing with the household expenditure of the families of our sample we have adopted the usual main subdivision, of outlay on food, on housing, on clothing, on fuel and lighting, and on miscellaneus items. Table VI gives this outlay per ' man ' per week for the *unchanged*, the *changed*, and the *new* families. The outlay of the *unchanged* and the *changed* families is also compared with their outlay in 1946, by means of indices, equating in each instance the outlay in 1946 to 100. If the expenditure in 1947 had been calculated per person instead of per ' man ', the indices for the *changed* families would be the same, since their ' man ' value per person had remained unchanged, but all the indices referring to the *unchanged* families would have been raised by about 3 per cent, this being the difference between their average ' man ' value per person in 1947 and in 1946.

TABLE VI

Household Expenditure of Three Groups of Families

	Outlay in 1947 per ' Man ' per Week			*Index of Expenditure per ' Man ' 1946=100*	
	Unchanged Families	Changed Families	New Families	*Unchanged Families*	*Changed Families*
	s. d.	s. d.	s. d.		
Food	15 3¼	15 1¾	15 6½	*104*	*106*
Housing	3 7½	2 11¼	3 4	*107*	*98*
Clothing	3 3½	2 4	2 10½	*156*	*89*
Fuel and Lighting ...	2 0½	2 4¼	2 4½	*88*	*119*
Miscellaneous ...	8 1	5 10¼	9 7¾	*99*	*86*
Total	32 3¾	28 7½	33 9¼	*106*	*99*

The indices in Table VI while suggesting certain changes in the pattern of expenditure, reveal no definite trends except as regards a slight upward movement in the expenditure on food. The expenditure on food will be considered in detail in Part II of this paper[1]; in the following pages we shall confine ourselves mainly to an analysis of the expenditure on non-food items.

(3) HOUSEHOLD EXPENDITURE AND FAMILY INCOME

Before, however, discussing specific groups of expenditure it may be well to study the relation between household expenditure and family income, in so far as our sample enables us to do so. Only 41 per cent of the families—67 in all—disclosed their full income. Some more housewives stated the earnings of one member of the family but did not know how much was earned by other members. Since such incomplete data could throw no light on the margins between household expenditure and family income, they had to be disregarded.

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[1] To be published in BULLETIN No. 12.

In general, the families that divulged their income contained relatively fewer earners than those that only stated their household expenditure, as will be seen from the analyses of the structures of the two groups, in Tables VII and VIII. Group *I*, in Table VII, represents the families that declared their incomes, and group *H*, in Table VIII, the remaining families that stated household expenditure only. The extremely small sub-group of 3 *changed* families in Table VII is statistically insignificant and has been included only for the sake of completeness.

TABLE VII

Structure of Families Stating Income (Group I)

	17 Unchanged Families		3 Changed Families		47 NEW Fams.[1]	67 Fams.
	1946	1947	1946	1947	1947	1947
Earners, 18 and over :						
Male	1.00	1.00	1.34	1.67	1.09	1.09
Female	0.18	0.20	0.33	0.66	0.10	0.15
Earners, 16—18						
Male	—	0.06	0.33	—	0.06	0.06
Female	0.06	0.06	0.33	—	0.02	0.03
Earners under 16	—	—	—	—	0.09	0.06
Non-earning Adults	0.82	0.80	1.00	1.00	1.01	0.95
Dependent Children	1.88	1.82	0.67	1.00	2.40	2.20
Persons per Family	3.94	3.94	4.00	4.33	4.77	4.54
' Man ' Value per Person	*0.76*	*0.77*	*0.87*	*0.83*	*0.74*	*0.75*

[1] Including *Unchanged and Changed* families that did not state their income in 1946.

TABLE VIII

Structure of Families Stating Household Outlay Only (Group H)

	30 Unchanged Families		18 Changed Families		48 New Fams.	96 Fams.
	1946	1947	1946	1947	1947	1947
Earners, 18 and over :						
Male	1.10	1.10	1.28	1.50	1.19	1.22
Female	0.27	0.30	0.72	0.89	0.17	0.35
Earners, 16—18						
Male	0.07	0.10	0.11	0.17	0.10	0.11
Female	0.20	0.37	0.06	0.39	0.19	0.28
Earners under 16	0.20	0.10	0.28	0.17	0.15	0.14
Non-earning Adults	0.87	0.90	0.89	0.93	1.01	0.96
Dependent Children	2.36	2.20	2.22	2.00	2.46	2.29
Persons per Family	5.07	5.07	5.56	6.05	5.27	5.35
' Man ' Value per Person	*0.77*	*0.79*	*0.79*	*0.80*	*0.76*	*0.78*

It will be noticed that in all our Tables dealing with the relation between household expenditure and income there appear only 47 *unchanged* and 21 *changed* families, as against the 55 *unchanged* and 25 *changed* families in all other Tables, while the number of NEW families adds up to 95 instead of 83. The reason for this is that eight of the *unchanged* and 4 of the *changed* families stated their incomes in 1947 but not in 1946, and therefore had to be included amongst the NEW families whenever we are considering incomes. These 12 *unchanged* and *changed* families are, of course, all to be found amongst the

NEW families of Group *I*, and when referring to this group we shall print NEW in capital letters so as to distinguish it from the *new* families as defined in Section (2).

The 67 families that stated their incomes contained per family 0.8 persons less than the 96 families that only stated household expenditure; a comparison of the average structures of group *I* and Group *H* suggests that this difference was wholly due to the larger number of earners in group *H*. This, however, disguises another essential difference between the families of these two groups; for besides the family with several earners there is another type of family included more frequently in group *H* than in group *I*, namely the family with a large number of young children. It seems that not only grown-up sons and daughters frequently leave the housewives ignorant of the total amount of their earnings, but that the same is true of husbands with large families of young children.

The differences in the general structure of the families in group *I* and group *H* should be borne in mind when considering the data in Tables IX and X. The household outlay per family of the two groups will be seen to be much less dissimilar than their household outlay per ' man '; housekeeping money, in fact, does not vary in proportion to the size of the family. However, for the families of group *I* and group *H* the greatest difference in the household expenditure per ' man ' was apparent in their respective outlay on miscellaneous items, *i.e.*, the outlay on those purchases that tend to be made to a larger extent by the earners themselves in families where the housewife is ignorant of the actual income than in those where she takes an active part in allotting it to it its various purposes. Hence the lower standard of living of the families in group *H* as compared with the families in group *I* may have actually been less pronounced than it appears from a comparison of the figures in Tables IX and X. The difference in the outlay on food of the two groups diminishes if the figures are corrected for those main meals that were purchased by the earners but the cost of which was not known to the housewives. If these meals are evaluated at the average prices paid for main meals away from home by members of other families, the outlay on food per ' man ' per week of group *I* was only 8½d. above that of group *H*, and if we make a similar correction for the *unchanged* families only, those of group *H* are found to have spent in 1947 about 1s. 3d. less per ' man ' per week on food than those of group *I*, instead of 2s. 1d., as is suggested by the figures in Tables IX and X. There were probably also more purchases of subsidiary meals and ' snacks ' by the earners in group *H* than by those in group *I*, if only because there were in group *H* 0.6. earners per family more than in group *I*. Taking all these points into consideration it seems justifiable to assume that the general patterns of expenditure of the families in group *I* and group *H* were not greatly dissimilar, and that therefore the data of income and expenditure in Table IX approximately reflect the average pattern of expenditure of all the families of our sample.

TABLE IX

Expenditure of Income of 67 Families (Group I)

	17 Unchanged Families per 'Man' p. Wk.				3 Changed Families per 'Man' p. Wk.				47 NEW Fams.[1] per 'Man'		67 Fams. per Wk.	
	1946		1947		1946		1947		1947		1947	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Food	15	1¼	16	7	16	7½	18	9¼	15	8½	16	0¾
Housing	4	4	4	10½	2	8½	3	3	3	6	3	9½
Clothing	1	10	3	7¼	4	7½	3	2½	3	3¼	3	4¼
Fuel and Lighting	2	11¼	2	7	2	6¼	2	1½	2	4	2	4½
Miscellaneous	10	2½	10	9½	9	9¼	7	10¼	10	8	10	6¾
Total Household	34	5	38	5¼	36	3	35	2½	35	5¾	36	1¾
Regular Savings[2]	1	9	1	0¾	1	2¼		2¾		7		8
Unspecified	12	8¾	10	6½	26	3½	27	4¼	7	7¾	9	2¾
Total Income[3]	48	10¾	50	0½	63	8¾	62	9½	43	8½	46	0½
					Per Family per Week							
Total Income[3]	146	0½	152	3¼	222	0	225	7¾	154	4½	157	0½
Housing	12	11½	14	9½	9	5	11	8	12	4¼	12	11¼
Fuel and Light	8	9	7	10½	8	9½	7	8¼	8	2¾	8	1¼
Total Household	102	7½	116	11¾	126	3	126	6¼	125	3¾	123	4

Relative Expenditure of Income

	17 Unchanged Families				47 NEW Fams.[1]		67 Families	
	1946		1947		1947		1947	
Food	43.9	30.9	43.1	33.1	44.3	36.0	44.4	34.9
Housing ...	12.6	8.9	12.7	9.7	9.8	8.0	10.5	8.2
Clothing ...	5.3	3.7	9.4	7.2	9.2	7.5	9.3	7.3
Fuel & Lighting	8.5	6.0	6.7	5.2	6.6	5.3	6.6	5.2
Miscellaneous ...	29.7	20.9	28.1	21.6	30.1	24.4	29.2	22.9
Total Household	100.0	70.4	100.0	76.8	100.0	81.2	100.0	78.5
Regular Savings[2]		3.6		2.1		1.3		1.4
Unspecified ...		26.0		21.1		17.5		20.1
Total Income[3] ...		100.0		100.0		100.0		100.0

[1] Including *Unchanged and Changed* families that did not state their income in 1946.

[2] Out of housekeeping money; *viz.*, by housewives and children at school.

[3] *Net* income: excluding direct taxes, compulsory insurances, and contributions to Trade Unions. Family Allowances are included.

The family income considered in Table IX is net income; it excludes direct taxes deducted at work, compulsory insurances, and contributions to Trade Unions, and it includes pensions and family allowances. The proportion in the average figure of income represented by pensions is negligible, but family allowances amounted in 1947 to almost 4 per cent of it.[1] If this is deducted from the weekly average income per family, of 157 shillings, we obtain for the families of our sample a figure of weekly net earnings of about 151 shillings, obtained by 1.1 adult male earner over 18 years old and 0.3 subsidiary earners, housewives working part time having been counted by us as half an earner.

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[1] Family allowances of 5 shillings a week are given for all children until they have reached school leaving age, except for the first child. They were introduced on August 6th, 1946. Since most of the accounts of the sample for 1946 cover an earlier period, they play an unimportant role in our figures of average income for that year.

TABLE X

Expenditure of Housekeeping Money/of 96 Families (Group H)

	30 Unchanged Families per 'Man' per Week 1946		30 Unchanged Families per 'Man' per Week 1947		18 Changed Families per 'Man' per Week 1946		18 Changed Families per 'Man' per Week 1947		48 New Fams. per 'Man' per Week 1947		96 Fams. per 'Man' per Week 1947	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Food	13	8½	14	6	13	7¼	14	6¼	15	6¼	15	0
Housing	3	0	3	1	2	11	2	11¾	3	2¾	3	1¼
Clothing	1	10¾	2	7¼	2	3¼	2	4	3	0	2	8
Fuel and Lighting ...	2	1½	1	9¼	1	9	2	0	2	5½	2	2½
Miscellaneous ...	6	3½	5	11¼	5	10¼	5	8	9	0½	7	3½
Total Household ...	27	0¼	27	10¾	26	4¾	27	6	33	3	30	3¼
Regular Savings[1] ...		4¾		5¼		6		3¾		8		5¾
					Per Family per Week							
Housing	11	9	12	4½	12	9½	13	7	12	11¾	12	11
Fuel and Lighting ...	8	4¼	7	0¾	7	8¼	11	2¼	9	10¼	9	3
Total Household ...	105	9¼	111	9¾	116	0	129	11	133	7¾	126	1½

Relative Expenditure of Housekeeping Money

	30 Unchanged Families 1946	30 Unchanged Families 1947	18 Changed Families 1946	18 Changed Families 1947	48 New Fams. 1947	96 Fams. 1947
Food	50.7	52.0	51.6	53.9	46.7	49.6
Housing	11.1	11.1	11.0	10.5	9.7	10.2
Clothing	7.0	9.3	8.6	7.4	9.0	8.8
Fuel and Lighting ...	7.9	6.3	6.6	8.6	7.4	7.3
Miscellaneous ...	23.3	21.3	22.2	19.6	27.2	24.1
Total Household ...	100.0	100.0	100.0	100.0	100.0	100.0

[1] By housewives and children at school.

Of the total income of the 67 families, slightly over 48 per cent was spent by the housewives on their families' food, housing, and fuel and lighting. The household expenditure on clothing, of 7.3 per cent of the income, represents only part of the actual outlay on this item, since much of their families' clothing was bought by the earners direct and hence was paid for out of the 20 per cent of the income retained by them.

(4) OUTLAY ON NON-FOOD ITEMS

(*a*) *Housing*

In Tables IX and X we saw that for the families of our sample in 1947, the outlay on housing amounted to 12s. 11d. per family per week, and we had found that the 133 families that lived in rented accommodation paid on the average 13s. 3d. per family per week. Of the remaining 30 families, 4 paid nothing for their accommodation, and 26 paid for rates and mortgage and house purchase charges on the average exactly as much as the families that paid rent and rates, *viz.*, 13s. 3d.

According to the Ministry of Labour index, the average outlay on housing had increased from the summer of 1946 to the summer of 1947, by about 4.2 per cent, owing to increases in local rates. If again we only consider those families of our sample that rented their accommodation—for the charges for houses that are being purchased or owned can alter from one year to another for reasons other than changes in actual cost—we find that the rise in the outlay on rent and rates of the *changed* families approached that figure fairly closely, the weekly payments by 22 families averaging 12s. 10½d. per family in 1946 and 13s. 5¾d. in 1947, showing a rise in the outlay by approximately 4.7 per cent. About 8 per cent more was paid on rents and rates in 1947 than in 1946 by the 40 *unchanged* families, the charges being, per family per week, 13s. 2½d. in 1946 and 14s. 3¼d. in 1947. Two of the families in this group had, however, obtained enlarged accommodation since the summer of 1946, and paid higher rents in consequence of this. A few other families living in council houses had their rents raised—by between 2s. and 3s. a week—probably because there were fewer dependent children and more earners in each of these families in 1947 than there had been in 1946.

Of the 26 families of our sample that owned or were buying their houses, 9 paid rates only, ranging from 4s. 3d. to 7s. per family per week, with a weekly average outlay of 5s. 5d.; 6 families paid rates and interest charges on a small mortgage, the lowest weekly outlay in this group being 8s. and the highest 13s., and the average outlay 10s. 5d. The remaining 11 families were buying their houses, spending on amortization, mortgage interest, and rates, from 14s. 7d. to 40s. per week, with an average outlay per family per week of 22s. 6d.

The lowest weekly rent including rates, was 3s., paid by a family of 5 persons, and the highest was 32s. 6d., also paid by a family of 5 persons.

(*b*) *Clothing*

Our figures in Tables IX and X suggest that approximately 9 per cent of the household outlay of the families of our sample for 1947, was spent on clothing. This expenditure was incurred by the housewives mainly on small items, such as stockings, undergarments, children's apparel, shoe repairs, and subscriptions to clothing clubs. In some instances, the clothing club was apparently a savings club for the specific purpose of buying clothes for cash, but mostly it seemed to be an arrangement with shopkeepers for the hire purchase of clothing. Of the 163 families, 77 recorded regular payments into clothing clubs, amounting on the average to 6s. 7½d. weekly per family making such payments. Purchases of larger items of clothing were recorded in only a few cases, and in order to avoid a distortion of our figures of household expenditure we excluded these in all instances where the purchase had not been made out of current income. No useful purpose could have been served by including this outlay, since in any case a fortnight would be far too short a period for assessing a family's average outlay on clothing; in order to obtain a figure of some validity one would require to know their complete expenditure on clothing for at least a year. Much of the outlay on the main items of clothing seemed to come direct out of the earner's pockets, irrespective of whether these purchases were made for the earners themselves or for other members of the family.

(*c*) *Fuel and Lighting*

Expenditure on fuel and lighting in 1947 took up approximately 7 per cent of the household expenditure of the 163 families of our sample. Table XI shows the main items on which this money was spent. It will be seen that the slightly higher average outlay recorded for 1947, as compared with the average outlay of the 151 families that supplied accounts in 1946, is largely accounted for by the relatively high expenditure of the 83 *new* families in 1947, which, on the average, amounted to 9s. 1¾d. per family per week. The weekly outlay per family by the *unchanged* and *changed* families, taken together, was about 8s. 5d. in 1947, as against 8s. 3d. in 1946, but while the outlay of the *unchanged* families was lower in 1947 than in 1946 by about 9 per cent that of the *changed* families had risen by about 30 per cent. For 1947, the largest difference in the outlay on fuel of these two groups of families appears, however, in that on coal, which during the summer months is bought mainly for storing for the winter, and purchases are usually made whenever the dealers deliver it. Thus the average figures of outlay of all the families of our sample for 1946 and 1947 give possibly a better indication of the trend of their expenditure on coal than the figures for each separate group of families. The slight difference in the average expenditure per family, which in 1946 was 3s. 5½d. per week and in 1947 3s. 6¼d., suggests that in 1947 about the same amount of coal was bought by the families of our samples as in 1946; for according to the Ministry of Labour index, the cost of coal had risen during this period by slightly over 2 per cent.

TABLE XI

Weekly Family Expenditure on Fuel and Lighting

Group of Families		Fuel and Total Outlay		Lighting *Index*	Coal Outlay		Gas Outlay		Electricity Outlay		Other[1] Outlay
		s.	d.	*1946=100*	s.	d.	s.	d.	s.	d.	d.
Unchanged (55)	1946	8	3¾	*100*	3	6½	2	7½	1	8¾	5
	1947	7	5¾	*90*	2	10¾	2	9	1	5½	4½
Changed (25)	1946	8	0½	*100*	3	5½	2	5½	1	8½	5
	1947	10	5¼	*130*	4	7¾	2	11¾	2	0¼	9¼
New (83)	1947	9	1¾		3	7½	2	10	2	2	6¼
All (151)	1946	8	1½		3	5½	2	8¼	1	7¼	4½
All (163)	1947	8	9¼		3	6¼	2	10	1	11	6

[1] Including firewood, paraffin, candles, matches, firelighters.

The outlay on gas and electricity was incurred either by means of slot meters or quarterly. When this latter was the case we have calculated the amount for the fortnight during which the housewife kept an account for us, from the bill for the preceding (April—June) quarter. The difference between this hypothetical and the actual consumption was probably in most instances sufficiently small to justify our neglecting it. The outlay on gas of the *unchanged* families showed an increase from 1946 to 1947, by 4½ per cent, while that of the *changed* families increased by 21 per cent, which, if the figures are deflated by means of the Ministry of Labour index, which during that period rose by about 1½ per cent, suggests a rise in the volume of consumption by the *unchanged* families of 3 per cent and of the *changed* families by 19 per cent. This latter increase was perhaps less due to the increased number of persons per family than to the increased number of earners, for we frequently noticed that while changes in the number of dependent children do not have much effect on any particular family's consumption of fuel, changes in the number of earners have; partly, perhaps, because changes in the family income determine the housewife's spending capacity and partly because they who pay the piper call the tune. The increased consumption of gas by the *unchanged* families was accompanied by a decreased consumption of electricity and may have been a direct cause of it. The *changed* families, however, also showed an increased consumption of electricity, spending on it in 1947 about 19½ per cent more than in 1946.

(*d*) *Miscellaneous Items*

The outlay on miscellaneous items covers a very wide field of expenditure, since it comprises all the housewives' expenditure that does not fall under the specific headings of food, housing, clothing, and fuel and lighting. Since we are dealing only with purchases made out of housekeeping money our figures are not comprehensive as regards the actual family expenditure on these residual items. As already pointed out in section (3), the housewife's expenditure on miscellaneous items tends to cover a wider field in families where she takes an active part in the sharing out of the family income than in those where she remains ignorant of the earners' wages and only receives a housekeeping allowance. This was indicated by the figures in Table IX and X, and it is brought out again by those in Table XII, which deal with the outlay on certain specific items in the ' miscellaneous ' group, by families that stated their income as well as by those that stated household expenditure only.

The figures in Table XII of outlay on drink refer mainly to the purchase of soft drinks. The outlay on newspapers includes the outlay on all periodicals bought by the housewife, but excludes expenditure on books and library subscriptions. The payments for insurances and clubs considered in Table XII were voluntary subscriptions to various private insurances, friendly societies, and mutual aid clubs; contributions to savings clubs and ' clubs ' run by tradespeople (Christmas clubs, coal clubs, clothing clubs, etc.) are excluded.

For the purpose of Table XII, the household outlay on the five specified groups (drink, tobacco, newspapers, amusements, and insurances and clubs) has been calculated per family per week, first, for the families that actually gave an expenditure on the particular item and, secondly, for all the families of the sample. The number of families that stated an outlay is shown in each instance as a percentage of the total number of families in the group. The decline in the number of *unchanged* families that recorded an outlay on tobacco could at least be partly accounted for by the fact that as they are getting older juvenile earners are gaining increasing control over their wages, in consequence of which more of them might have bought their

Table XII

Expenditure on Certain Miscellaneous Items out of Housekeeping Money

	67 Families Stating Income			96 Families Stating Household Outlay Only		
	1947			1947		
	Families buying as % of 67 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 67 Fams.	Families buying as % of 96 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 96 Fams.
		s. d.	s. d.		s. d.	s. d.
Drink[1]	60	2 11	1 8¾	47	3 4	1 6¾
Tobacco	78	11 2¼	8 8	59	10 1	5 11¾
Newspapers, etc. ...	99	1 8¼	1 8	99	1 9¼	1 9¼
Amusements... ...	82	5 2¾	4 3½	76	4 4¼	3 3¾
Insurances and Clubs[2]	97	5 0	4 10¼	96	5 0½	4 10¼
Total Av. Outlay ...			21 2½			17 5¾

	17 Unchanged Families Stating Income					
	1946			1947		
	Families buying as % of 17 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 17 Fams.	Families buying as % of 17 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 17 Fams.
		s. d.	s. d.		s. d.	s. d.
Drink[1]	53	5 7½	2 11¾	76	3 7	2 9
Tobacco	88	9 5¼	8 4	65	8 0¼	5 2¼
Newspapers, etc. ...	94	1 7¼	1 6¼	100	1 10½	1 10½
Amusements... ...	76	5 11¼	4 6½	82	5 9¼	4 9
Insurances and Clubs[2]	94	3 8½	3 6	94	4 6¾	4 3½
Total Av. Outlay ...			20 10½			18 10¼

	30 Unchanged Families Stating Household Outlay Only					
	1946			1947		
	Families buying as % of 30 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 30 Fams.	Families buying as % of 30 Fams.	Weekly Outlay p. Fam. Actually buying	Weekly Outlay p. Fam. Av. of group of 30 Fams.
		s. d.	s. d.		s. d.	s. d.
Drink[1]	50	2 4	1 2	50	1 5¼	8½
Tobacco	63	6 6¾	4 2	53	6 7¾	3 6½
Newspapers, etc. ...	97	1 7½	1 6¾	97	1 7½	1 6¾
Amusements... ...	67	6 4¾	4 3¼	67	4 0¾	2 8½
Insurances and Clubs[2]	100	4 5½	4 5½	97	5 0½	4 10½
Total Av. Outlay ...			15 7½			13 4¾

[1] Including soft drinks.

[2] Excluding compulsory insurances, clubs covering payments for specific purchases (clothing, furniture, coal, etc.), and savings clubs.

own cigarettes, and possibly even cigarettes for their mothers, in 1947 than in 1946. This, however, did not seem to have been the case as regards the 17 *unchanged* families that stated their income, since the unspecified margin between their income and their expenditure was smaller in 1947 than it had been in 1946.

In 1946, a negligible number of families had recorded any outlay on hire purchases, and in no instance had it amounted to more than a few shillings a week, the only objects bought being wireless sets. In 1947, instalments were much commoner, 30 of the 163 household accounts recording such commitments with regard to furniture, bedding, gas and electric boilers, radio sets, prams, and bicycles, the weekly outlay ranging from a shilling for a pushchair to 20 shillings for furniture. The average weekly outlay on instalments of the 30 families was 5s. 10d., but eight of them were spending per week from 10s. to 20s. Furniture was being bought by 12 of the families, wireless sets by 3 families, bicycles by 2 families, and gas and electric appliances by 7 of them.

(5) OUTLAY OF INCOME AND SIZE OF FAMILY

Since our household accounts were obtained from families of very different sizes it may be asked whether the pattern of average expenditure suggested by the figure in Tables IX and X is not merely the outcome of an intricate composite picture disguising fundamental differences. We have, therefore, subdivided the 67 families that stated their income in 1947, into 3 different groups, the first one consisting of 42 families of less than 5 persons, the second of 23 families of from 5 to 7 persons, and the third of 2 families comprising, respectively, 8 and 12 persons[1]. We considered it advisable to place these two very large families into a separate group so as to be able to set clear limits to the size of the families in group II. Had we excluded from group II the families consisting of 7 persons in order to enlarge group III, we would have reduced group II to 16 families, which seemed undesirably small.

TABLE XIII

Size of Families Stating Income

	Pers. p. Fam.	No. of Fams.	Av. Pers. p. Fam.	'Man' Value p. Pers.	Income p. Family per Week
Group I	Under 5	42	3.6	0.78	149/0¾
Group II	5—7	23	5.7	0.72	167/2¼
Group III	8 & over	2	10.0	0.71	208/–
		67	4.5	0.75	157/0½

The average structure of the three groups of families is given in Table XIII, while Tables XIVA to XIVE show their relative outlay of income[2]. The last columns in Tables XIVA to XIVE give the average proportion of income devoted to a particular line of expenditure. A survey of these figures reveals that, on the whole, these averages lie fairly close together for the two main groups of families. It was to be expected of the data for only two families to show a less degree of conformity than those for the larger groups of families, and it seems probable that if a sufficiently large sample were obtained the expenditure patterns of families of 8 and more persons would reveal some characteristic differences from that of smaller families. These very large families, however, only represented about 10 per cent of all the families of our sample for 1947.

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[1] The family of 8 persons contained one adult male earner and six dependent children, and the family of 12 persons contained one adult male earner, two juvenile male earners, and eight dependent children.

[2] We are here again referring to net income as defined in section (3).

TABLE XIVA

Outlay on Food Compared with Income

Proportion of Income :	Under 20%	20%–30%	30%–40%	40%–50%	50%–60%	Av. %
Group I ...	4	7	22	5	4	33.3
Group II ...	—	5	8	6	4	36.7
Group III ...	—	—	1	1	—	42.3
67 Fams. ...	4	12	31	12	8	34.9

TABLE XIVB

Outlay on Housing Compared with Income

Proportion of Income :	Under 4%	4%–8%	8%–12%	12%–16%	16% & over	Av. %
Group I ...	4	15	11	9	3	8.7
Group II ...	4	8	7	3	1	7.7
Group III ...	—	2	—	—	—	5.8
67 Fams. ...	8	25	18	12	4	8.2

TABLE XIVC

Outlay on Fuel and Lighting Compared with Income

Proportion of Income:	Under 2%	2%–4%	4%–6%	6%–8%	8% & over	Av. %
Group I ...	4	11	11	9	7	5.0
Group II ...	1	2	10	6	4	5.7
Group III ...	1	1	—	—	—	2.7
67 Fams. ...	6	14	21	15	11	5.2

TABLE XIVD

Proportion of Income Retained by Earners

Proportion of Income :	Under 10%	10%–20%	20%–30%	30%–40%	40% & over	Av. %
Group I ...	14	12	7	5	4	20.3
Group II ...	6	9	3	2	3	23.0
Group III ...	—	—	2	—	—	26.8
67 Fams. ...	20	21	12	7	7	21.5

TABLE XIVE

Income Retained by Earners and Expenditure on Clothing and Miscellaneous Items

Proportion of Income:	20%–30%	30%–40%	40%–50%	50%–60%	60%–70%	70% & over	Av. %
Group I	2	5	15	14	3	3	53.0
Group II	—	7	7	7	1	1	49.8
Group III	—	—	1	1	—	—	49.2
67 Fams.	2	12	23	22	4	4	51.7

We will now consider Tables XIVA to XIVE in some detail. Almost half of all the families were found to have spent on food between 30 per cent and 40 per cent of their income, but only about one third of the larger families; over one-fifth of the smaller families used more than this proportion, and over two-fifths of the larger families. For nearly two-thirds of all the families the outlay on housing took up between 4 per cent and 12 per cent of their income, the proportion being somewhat less for the smallest families, about two-sevenths of which spend on it more than this, as compared with about one-sixth of the families of from 5 to 7 persons. The outlay on fuel and lighting absorbed between 4 per cent and 6 per cent of the income of not quite one-third of all the families; over two-fifths of the families in group II and about one quarter of the families in group I recorded this outlay.

The proportion of the income allotted to the three main items, food, housing, and fuel and lighting, is probably fairly reliably defined in the household accounts supplied to us. And although the outlay on fuel and lighting is likely to be somewhat higher in winter, this difference may not be very substantial for the families of our sample, not only because of the large quantities of coal bought by them during the summer but also because when no coal fires are burning, gas and electricity are resorted to for occasional heating, so that the consumption of these during the winter may not be greatly above what it was during the spring and early summer. The distribution of the remainder of income is outlined much less distinctly by our household accounts, since it depends on purchases that may or may nct be considered by the earners the concern of the housewife. If the latter was the case, then we obtained no record of the outlay.

In nearly two-thirds of the families the housewife spent an clothing from 5 per cent to 10 per cent of the total income, but, as we already pointed out, a large proportion of the families' clothing was stated to be purchased by the earners and not with housekeeping money. Since the outlay on miscellaneous items entered in the household account, covered a large number of purchases and payments which while in some families they were made by the housewife were made in others by the earners, no reliable pattern of relative expenditure could be obtained for this group. It is, however, possible to consider the expenditure on clothing and on miscellaneous items in conjunction with the proportion of the family income retained by the earners; this has been done in Table XIVE. Table XIVD shows only the proportion of the income retained by the earners. It must, however, be remembered that the figures in Table XIVD relate to families where the housewife knows the amount of total income and probably in some instances manages its whole distribution, even to purchasing many of the earners' personal requirements. If we add the margin kept by the earners to the housewife's outlay on miscellaneous items and on clothing we find, in Table XIVE, that the total amount allotted to purchases of clothing and of miscelleanous items, and to savings, represented from 40 per cent to 50 per cent of the total net income in about one-third of the families, while in another third of the families it represented from 50 per cent to 60 per cent of it. For about one-eighth of all the families the proportion was over 60 per cent.

(6) CONCLUSION

No striking changes came to light in the household expenditure of the families of our sample in 1947, as compared with their expenditure in 1946. The cost of housing had increased slightly from 1946 to 1947, and we also found a slightly larger average expenditure on food. No increase was apparent in average earnings, a small rise in the income of 17 *unchanged* families being accounted for by a small rise in their number of earners and by family allowances. The families that stated their income showed an average outlay on food, housing, and fuel and lighting, of slightly more than 48 per cent of their total net income; under one-fifth of them spent on these items more than 60 per cent, roughly one-third spent on them from 50 per cent to 60 per cent, a further third spent on them from 40 per cent to 50 per cent, and nearly one-eighth of the families used for this expenditure less than 40 per cent. Of the 163 families that kept an account in 1947, about 82 per cent lived in rented accommodation; of the remaining families, 4 paid nothing for their accommodation, 11 were buying their houses, 6 owned their houses, but had a small mortgage on them, and 9 owned their houses free of all debt charges. One noticeable difference in the household outlay incurred in 1947 as compared with that in 1946, was the increased expenditure on instalmants for items other than clothing. In 1946 this expenditure had been insignificant, but in 1947, 30 of the 163 families were buying furniture, household appliances, wireless sets, etc., by means of instalments, paying on the average nearly 6 shillings per family per week.

T. SCHULZ.

The TERMS *of* TRADE *of* SELECTED COUNTRIES, 1870–1938

The following analysis of the changes in the (net barter) terms of trade of selected countries, 1870–1938, is in four parts, covering long-run developments, cyclical changes, the influence of capital exports, and the relation between terms of trade and volumes of trade. The present article deals with the first two aspects. Their separation is at some points rather artificial so that the conclusions under each heading are subject to later qualification. Historical material and supporting evidence are submitted to the extent necessary to illustrate the main factors operating on the terms of trade; no attempt is made to trace in detail their movements in individual countries year by year.

The net barter terms of trade are calculated here as the ratio between indices of export prices and import prices so that an improvement of the terms of trade appears as a rise and a deterioration as a fall in that ratio index.

The derivation of the indices and the sources are given in an Appendix which also stresses the limitations of the indices. These limitations, and the margins of error involved, are such as to make small movements irrelevant and elaborate statistical treatment unjustifiable.

1. Long-Run Developments

Shifts in the terms of trade are the outcome of changes both in price ratios and in the composition of trade; they can be fully explained only by reference to both factors. But if we take the composition of trade at a given time as the criterion for classifying the various countries into two main groups—primary producers and industrial exporters—then the alterations in the terms of trade *as between these groups* are bound to exhibit a fairly high correlation with changes in the unit purchasing power of primary products over manufactures. A short discussion of these changes may serve, therefore, as a starting point.

The price history of 1870—1938 covers three fairly distinct periods. The first period which extends into the second half of the 'nineties was one of generally falling prices. This development was associated from about 1880 with a cheapening of raw materials and foodstuffs relatively to manufactured goods—a result largely of the heavy international investment in the 'sixties and early 'seventies which subsequently bore fruit in an absolute and relative fall in the cost of producing and transporting primary products.

The second period covered about fifteen years and may be dated from 1896–97 to 1911–13. Rising prices were associated with an increase in the unit purchasing power of raw over processed goods. There is a good deal of evidence for this period of a rise in relative costs in primary production, and of the tendency for a growing demand to outstrip the productive capacity of the food and raw material exporting countries. The rapid transformation of the economic structure of the United States was an important factor in this development.

In the last period (1913 to 1936–38) primary products again cheapened relatively to manufactures. Increased wage differentials between industry and agriculture, which generally resulted from the war (except in Canada and Australia), and marked improvements of productivity in important extractive industries and in the production of many important crops were mainly responsible for this reversal. Moreover, the extension of primary capacities which was encouraged by the war became effective in some markets at a time when the demand had become rather inelastic with respect to upward changes in incomes (cereals).

A rough indication of these variations can be obtained by comparing the Sauerbeck wholesale price index of primary goods with a price index of finished manufactures entering into British trade.[1] The result is as follows :

Purchasing Power of Primary Products over Manufactures, 1900=100.

1881–85	119	1911–13	114
1896–1900	98	1936–38	85

It is impossible to show with any degree of precision how closely these changes were connected with changes in the conditions of supply of primary products and of industrial goods. Cost data covering so wide a range of articles are not available. The nearest approximation may be indices of money wage costs per unit of output in U.S. food and raw materials production on the one hand and in U.S. and U.K. manufacturing on the other. If these are taken as fairly representative estimates of the relation which the costs of producing primary products have borne to manufacturing costs from 1880,[2] the three periods emerge quite distinctly (Table I).

As a result of these long-period shifts in the cost and price ratios of primary to manufactured products, there was a tendency for the terms of trade of the industrial countries (*i.e.* U.K., France and Germany) to rise in the first period, to fall in the second, and to rise again, or to establish themselves on a higher level, in the third.[3] The primary producing countries show the opposite movement. Among them we must include, for the first period, the United States, which at that time was predominantly an exporter of crude foodstuffs and materials.[4] (For the terms of trade see Charts on pp. 337-8.)

[1] This is the method employed by the League of Nations in its study on *Industrialisation and Foreign Trade.* For finished manufactures the combined British import and export price indices for such articles are used ; these indices are taken from W. Schlote, *Entwicklung und Strukturwandlungen des englischen Aussenhandels von 1700 bis zur Gegenwart.*

[2] At that time U.S. industrial production was roughly of the same size as U.K. production. In the late '20s the ratio between them was about 4.5:1. Cf. R. Wagenführ, Die Industriewirtschaft. *Vierteljahrshefte zur Konjunkturforschung, Sonderheft* 31; and League of Nations, *Industrialisation and Foreign Trade,* p. 128.

[3] The French terms of trade, which are not included in the Charts, followed these trends very clearly. An index number based on Flux's calculations of French export and import prices shows a continuous rise between 1876 and 1897, from 89 to 108 (1888–9=100). The following period up to 1913 is covered by White's analysis. An index derived from his figures exhibits a downward trend from the end of the '90's. Cf. A. W. Flux, Price Movements in the Foreign Trade of France. *Journal of the Royal Statistical Society,* September 1900 ; and H. D. White, *The French International Accounts, 1880 to 1913.*

[4] Even later the weight of these primary exports was great enough to exert a strong, and in some periods decisive, influence on the U.S. terms of trade.

TABLE I

Labour Productivity and Wage-Costs per unit product in Primary and Secondary Production (1900=100)*

	Productivity				*Wage-Costs*†			
	Primary		*Secondary*		*Primary*		*Secondary*	
	U.S. Agricul.	U.S. Mining	U.S. Manuf.	U.K. Manuf.	U.S. Agricul.	U.S. Mining	U.S. Manuf.	U.K. Manuf.
1880	80	56	75	94	111	150	112	84
1900	100	100	100	100	100	100	100	100
1910	109	104	117	103	128	123	109	102
1935	152	302‡	270	171	74§	109‡§	121§	117§

*For sources and methods of derivation see Appendix B.

†Rates of wage rate indices to productivity indices.

‡If gas and oil-wells are excluded the figure for productivity is 198, for wage-costs 165. From 1900–1939 there was greater expansion in these branches of mining than in any other. In 1939 their products constituted about one half of the total value of U.S. Mining Products.

§ Wage-cost indices adjusted for gold-price variations are: U.S. Agriculture, 44; U.S. Mining, 64; U.S. Manufacture, 71; U.K. Manufacture, 72.

The influence over long periods of changes in the conditions of supply may be tested further by comparing changes in wage costs with changes in export prices. This is done in Table II for the United Kingdom and the United States. The indices are no more than general indications of broad changes. In the case of the United Kingdom the index numbers of unit wage costs refer to industry, in the case of the U.S.A. to industry and agriculture (because of the importance of U.S. agricultural exports). It should also be noted that the index numbers of export prices are constructed in such a way that their changes may indicate either changes in the prices of the traditional export goods or changes in the composition of the export lists.

TABLE II

Wage costs per unit product and export prices for the U.S.A. and the U.K. 1880–1935 (1900–1 =100)

	U.S.A.		*U.K.*	
	*Wage-costs**	*Export-prices*	*Wage-costs**	*Export-prices*
1880–81	111	133	84	107
1890–91	104	115	93	97
1900–01	100	100	100	100
1910–11	116	135	102	114
1924	166	195	154 (140)†	219 (208)†
1935	98 (62)†	127 (80)†	117 (72)†	149 (92)†

* Ratio of wage rate indices to productivity indices. See Appendix B.

† Figures in brackets are adjusted to gold-price basis.

This calculation has no direct bearing on the development of the U.S. and U.K. terms of trade because it deals with only one component—export prices. The movements of these show a fair degree of agreement with the movements in wage costs. To expect strict proportionality between them would of course be quite unwarrantable since a variety of reasons may cause variations in the ratio of prices to wage costs. The most outstanding change in that ratio seems to have occurred in Britain during the last quarter of the nineteenth century, particularly in the 'eighties, when many important branches of industry were confronted with increasingly severe competition, with a consequent cut in profit margins.[1] The empirical evidence nevertheless suggests that changes in productivity and in wage rates have an important determining influence on the terms of trade over long periods.

Two applications of this argument are possible in respect of long-run developments. Firstly there is the widening gap from about 1890 to 1911 between the British and the German terms of trade. It is admittedly very doubtful how the latter actually moved : the index number of German terms of trade is a hybrid, being derived from an export price index of German manufactures and a price index of British imports. But it is certain that Germany from the 'nineties and particularly after the close of the century progressively reduced her prices in export markets relatively to the British. The largest price reductions, those mainly responsible for the fall in the index number, occurred in ' metals ', that is, principally iron and steel products, but German textiles also became relatively cheaper. Short period influences offer a partial explanation. In the case of iron and steel products it seems that price discrimination in foreign markets and selling below cost on the part of German makers played a role.[2] Burns's *Economic History of Steel Making* provides a wealth of evidence, however, showing that not only were German producers driven to make more violent onslaughts in export markets, but they were able to do so from about 1900 with a new cost advantage. Owing to the rapid adoption of new methods which had no parallel in British industry at that time, Germany achieved considerable reductions in real costs. These reductions were sufficient to transform the German iron and steel industry into a relatively low cost industry, despite the fact that the gap between the low German wages and the higher British wages tended to become narrower. Information on the textile industries points in the same direction. We know from Professor Jones's study on *Increasing Returns* that the real cost of manufacturing cotton goods in Britain began to rise from about 1900 and continued to rise until the outbreak of the first world war. In the newer German industry there was no similar development. It is reasonable therefore to attribute the divergence between the British and the German terms of trade to these shifts in the supply curves of the principal export industries.

The second case is the strong absolute and relative deterioration in the Japanese terms of trade in the decade 1927–1937. Here again a multiplicity of factors was at work. Between 1929 and 1932 the dominant influence was the collapse of the U.S. market for silk. Silk (including silk goods) was the leading Japanese export commodity, accounting in 1929 for about 45 per cent of the value of Japan's total exports. The bulk was sold in the United States, and the sudden shrinkage of this market was bound, therefore, to turn the terms of trade in favour of countries with a more highly diversified trade. Japan adjusted herself through cost reductions in her old export

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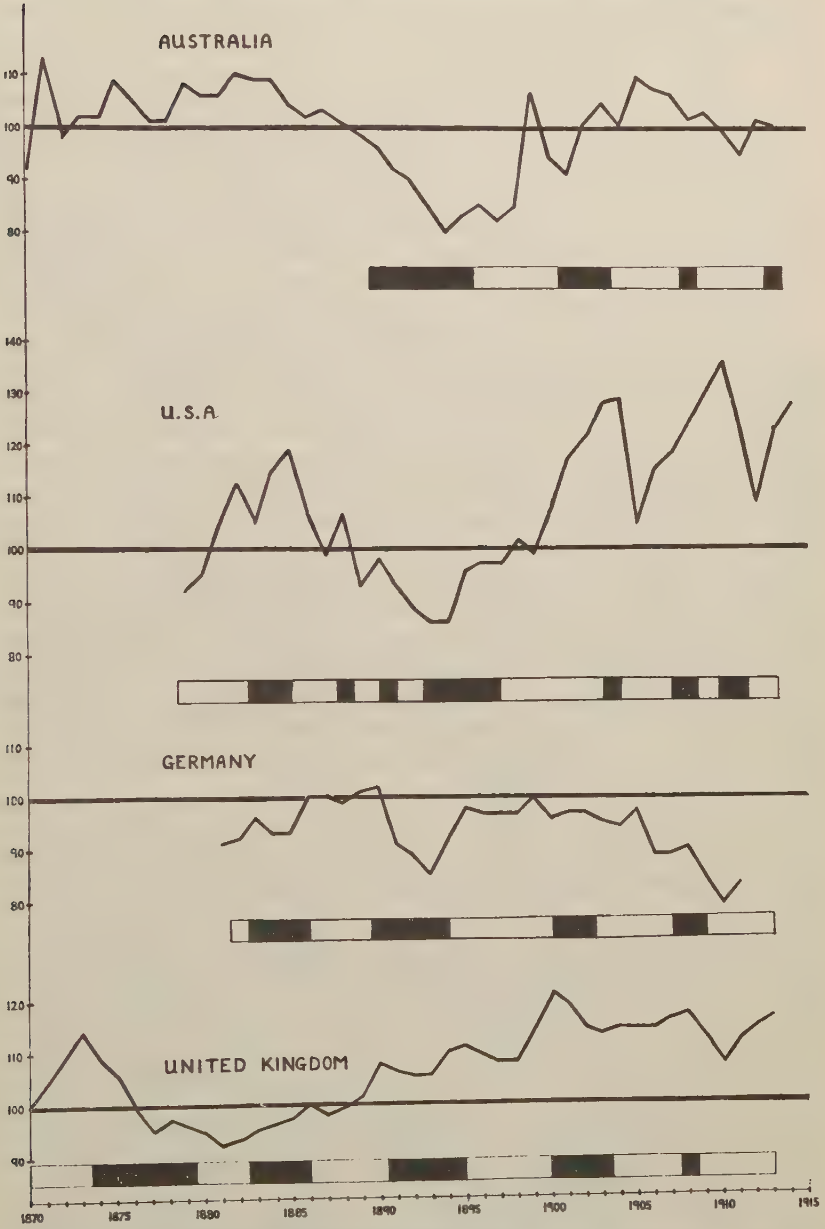
[1] Cf. W. W. Rostow, *The British Economy of the Nineteenth Century*, chapters III, IV and IX, and Appendix. Rostow also notes that the severity of competition probably decreased from the close of the century to 1914.

[2] Cf. Burns, *Economic History of Steel Making*, particularly Chapter VII.

Chart I. Indices of Terms of Trade 1870–1913[1] (1888–89=100)
Export Price Indices divided by Import Price Indices.



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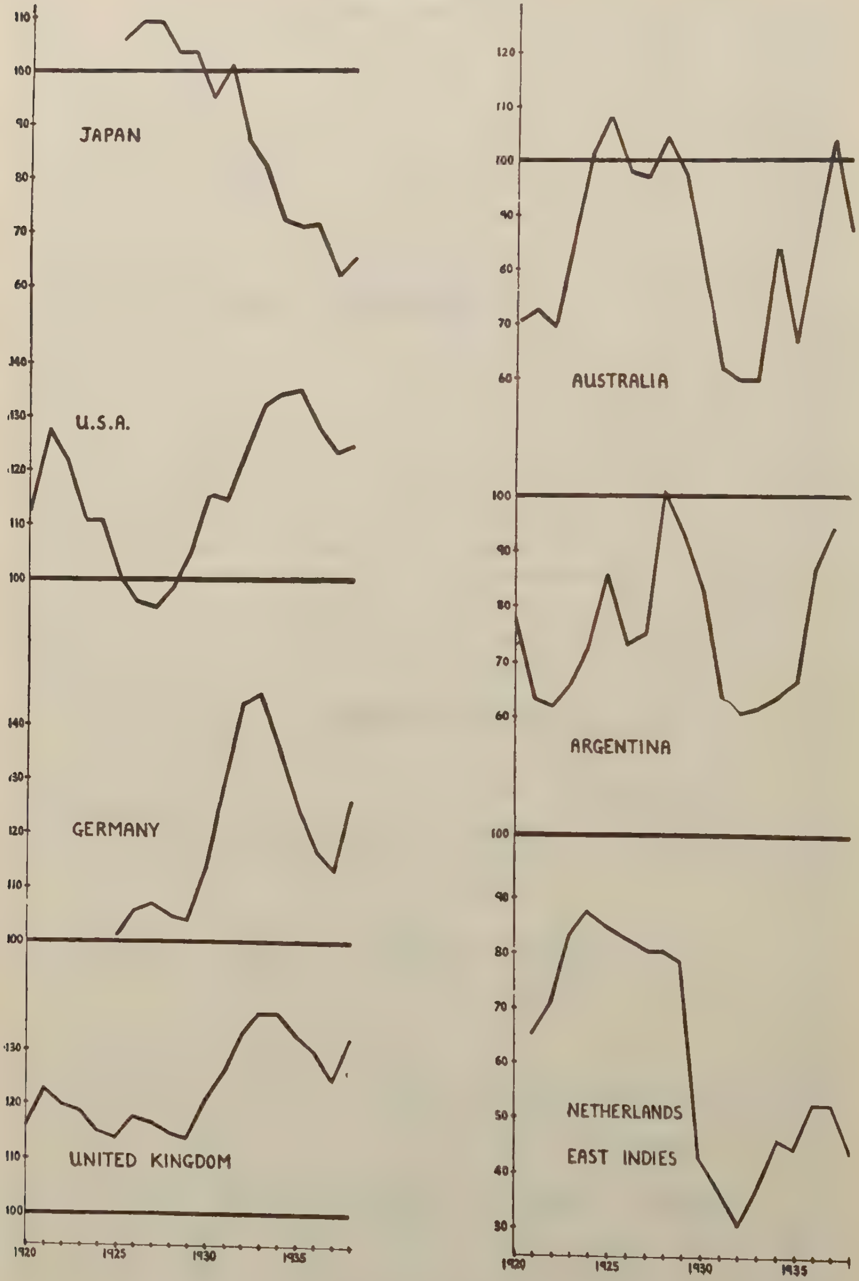
[1] Black rectangles indicate depressions, white indicate years of prosperity. Information from Mitchell's summary of Thorp's *Business Annals.*

Chart II. Indices of Terms of Trade 1920–1938 (1913=100)



industries as well as by substituting for her traditional exports the products of new progressive industries.[1] To the extent that the reduction was in real costs—as in effect it largely was—the depressive influence on living standards of the very adverse movements of the terms of trade was offset.[2] What is essential to the argument here, however, is that the downward shift in the supply curve of many Japanese industries was itself an independent factor shaping the trend of the terms of trade. This influence can be seen, more or less in isolation from other developments, in the years 1927 to 1929, when an expanding demand for Japanese goods, notably silk, was met at falling prices. Considerable technical improvements were achieved in these years in the production and selling of silk, with a consequent relative decline in Japanese export prices and in her terms of trade. A similar deterioration, unusual in times of prosperity, occurred at the same time in a number of primary producing countries,[3] and one could say, therefore, that the Japanese terms of trade moved from 1927 (or at any rate from 1928–9) to 1932–3 in the same direction as the terms of trade of agricultural producers, while afterwards they followed the trend shown by industrial exporters. That this was so brings into relief the changing composition of Japanese trade. Its growing diversification was itself a symptom or result of the high average rate of increase in productivity which, with wages lagging behind and even falling,[4] enabled many new industries to compete in foreign markets.

The evidence so far supports the view that long-run changes in the terms of trade reflect changes in relative costs, which affect the *trend* of selling prices in the established export industries and co-determine the composition of the export list. Changes in demand are difficult to disentangle at this stage; they operate on long-run developments mainly through their effects on the schedule of costs. Their direct influence belongs to the short period, where they are particularly relevant to cyclical fluctuations.

2. Cyclical Movements

It is usually assumed that the terms of trade of industrial countries will improve in a depression and deteriorate in an upswing. This 'normal' behaviour, and the corresponding opposite movement in the primary producing countries, follows from the cyclical fluctuations in the purchasing power of primary products: their supply in recovery and depression is thought in most cases to be less elastic than the supply of manufactured goods, so that their prices fluctuate more widely in response to (cyclical) changes in demand. This ' normal ' or theoretical expectation is on the whole confirmed by the behaviour of the British and the German terms of trade during the inter-war period. Their main turning points in 1921, 1929, 1933 and 1937 coincided with the turning points of the trade cycle; terms of trade maxima were reached in these countries in years of depression, and minima at the trade peaks. We also find a fair degree of regularity in the agricultural countries in this period, although there were exceptions and deviations to which we shall refer later.

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[1] 'A world which does not want Japan's silk is bound to find Japanese cotton goods cheaper than they otherwise would have been.' (R. S. Sayers, 'Japan's Balance of Trade', *Economica* 1935). The adjustment partly proceeded by way of cuts in money wages: as a result of the agricultural depression and the consequent influx into the towns of rural 'workers', money wage rates declined throughout the 'thirties (in contrast to other industrial countries). There was at the same time a pronounced fall in real costs. Cf. the information on efficiency in individual industries in *The Industrialisation of Japan and Manchukuo* (ed. Schumpeter), especially Ch. XIX also G. C. Allen, *A Short Economic History of Modern Japan*, Chapters VII and X. For the cotton industry see the comparative figures for the U.K., the U.S.A. and Japan given by L. Rostas, Productivity of Labour in the Cotton Industry, *Economic Journal*, June–September, 1945.

[2] There was undoubtedly an increase in real income per head during this period 1927–37, but the estimates vary a great deal. Cf. *The National Income of Japan 1930 to 1939*, published by the Japanese Economic Federation; also G. C. Allen, l.c.

[3] See the terms of trade of the Netherlands Indies in Chart II, and the analysis on p. 387.

[4] The relative fall in Japanese money wages (in terms of gold at the prevailing rate of exchange) was accentuated by the depreciation of the yen at the end of 1932 which turned the terms of trade further against Japan. But by that time their deterioration due to the relative fall in yen export prices had already gone a very long way.

No similar regularity can be established for the two periods before the first world war, though in the case of Great Britain a distinct cyclical pattern appears. In contrast to the post-1919 experience, however, the British terms of trade usually improved in the upswing and deteriorated in the depression. This tendency did not always prevail but it was clearly dominant. As to the terms of trade of other countries, it is hardly possible to generalise about the direction of their change in the pre-1914 trade cycles.

The following analysis will be mainly devoted to the ' heterodox ' behaviour of the British terms of trade up to 1914, to the erratic fluctuations of the U.S. terms during the same period, and to the seemingly anti-cyclical course of the latter from 1925 to 1929. As the middle of the 'twenties was a period when the terms of trade of most countries, not only of the United States, moved in a rather irregular fashion, the analysis will broaden out at this stage and cover in a general way the primary producers. Whether or not it is legitimate to assume a ' normal ' cyclical behaviour of the terms of trade is the principal question to which an answer is sought.

The asymmetry which we observe in the cyclical movements of the British terms of trade before and after 1914 may be partly explained by a phenomenon not specifically connected with the British economy. It seems that the purchasing power of primary goods generally showed smaller fluctuations in the trade cycles before the first world war than after. In Table III an average of British and German export prices of finished goods is taken to represent the world price level of manufactures, and this index is compared with the Sauerbeck price index of primary products. For all depressions up to 1918 there is a virtual stability of the price ratios between the two groups of commodities.[1] A very similar result is obtained if one uses for making this comparison the method employed by the League of Nations.[2] Thus the fall in the purchasing power of primary goods seems not to have been very significant in the depressions before the first world war when compared with a decline by 25–33 per cent, which occurred in the crisis after 1929.[3]

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[1] See also the calculation contained in *Der deutsche Aussenhandel unter der Einwirkung weltwirtschaftlicher Strukturwandlungen* (Enquete-Ausschuss, 20. Band, 2. Halbband, p. 515).

[2] Cf. footnote 1, p. 374 of this article.

[3] Cf. League of Nations *World Prices and Production 1925–1933*, p. 104. See also cols. 6 and 7 of Table IV.

TABLE III

Purchasing Power of Primary Products over Manufactured Goods during the Trade Cycle (Cyclical Peaks = 100)

	Purchasing Power of:			
	Raw materials and foods		*Foods*	
	A	B	A	B
1873...	...	100	...	100
1879...	...	96	...	109
1882...	100	100	100	100
1886...	93	93	92	92
1890...	100	100	100	100
1895...	101	98	102	99
1900...	100	100	100	100
1903...	95	95	99	99
1907...	100	100	100	100
1908...	94	93	102	101

A. Ratio of Statist index to index of unweighted average of British and German manufactured export prices. (Source as in Appendix A).

B. Ratio of Statist index to average of indices of British Import and Export Prices for manufactured goods given by *Schlote*.

The lack of a reliable world price index for manufactures renders a finer measurement or a more precise statement impossible, and one is forced to leave this question open.[1] One point, however, is fairly well established. Whereas in the inter-war period there were only very few primary commodities of which the prices did not decline during depressions relatively to the prices of U.S., German or British manufactures,[2] a substantial number of primary commodities—particularly foodstuffs—actually gained in purchasing power during many pre-1914 depressions (although primary products taken as a whole may have lost). From this fact, which is confirmed in more specialised studies of the development of food prices before 1914,[3] a general conclusion can be drawn. A country mainly exporting (importing) primary goods was bound in the conditions of the inter-war period to experience a fall (rise) in its terms of trade during a depression. Before the first world war this was not a normal expectation; what happened depended on the particular kinds of primary commodities which a country exported or imported.

[1] Precision is the more difficult as the distinction between primary products and manufactures is rather fluid. British export goods, for instance, the prices of which weigh heavily in the indices for manufactures, had to some extent the character of primary goods; the degree to which they were processed was small in some cases.

[2] See the indices in F. C. Mills, *Prices in Recovery and Recession*, pp. 210–212. They show the terms of trade between each of a large number of primary products, and U.S., British and German manufactures, 1913–1936.

[3] For instance, Georg Brandau, *Ernteschwankungen und wirtschaftliche Wechsellagen, 1874–1913.* Purchasing power minima of foodstuffs over other goods are shown to have occurred more frequently in peak years of the trade cycle than in any other phase. Why food prices behaved as they did is another question; to answer it would need a close study of the inter-action of trend factors, cyclical influences and crop variations. An instructive analysis on these lines covering a large number of commodities can be found in J. Pedersen and O. Strange Petersen, *An Analysis of Price Behaviour 1855–1913.*

For Great Britain this is substantiated in Table IV which shows the development of the purchasing power of British manufactures and British materials—that is, mainly coal—over foreign foodstuffs and materials. Food import prices fluctuated less in most trade cycles before 1914 than British export prices. Owing to the great weight of foodstuffs in total imports, the low amplitude of their cyclical changes tended to stabilise the unit value of total imports, so that the terms of trade improved in prosperity when export prices rose more sharply, and worsened in depression.

TABLE IV

British Import and Export Prices, Selected Groups, 1870–1938

(1913=100)*

Year†	*Import Price*		*Export Price*		*Ratio between*		
	Foodstuffs (1)	*Materials* (2)	*Materials* (3)	*Finished Goods* (4)	(3) : (1) (5)	(4) : (1) (6)	(4) : (2) (7)
1870	121	123	71	109	59	90	88
1871	126	109	72	110	57	87	101
1872	131	120	108	120	82	92	100
1873[2]	131	119	136	121	104	92	102
1874[1]	130	113	112	114	86	88	101
1875[1]	126	109	89	109	71	87	99
1876[1]	122	105	78	100	64	82	95
1877[1]	131	101	72	96	55	73	95
1878[1]	119	95	67	93	56	78	97
1879[2]	113	90	62	88	55	78	97
1880	117	97	68	92	58	79	95
1881	118	95	65	87	55	74	92
1882[2]	119	94	65	88	55	74	94
1883[1]	114	91	64	86	56	75	94
1884[1]	105	89	62	83	59	79	94
1885[1]	98	83	60	80	61	82	96
1886[2]	92	77	57	76	62	83	96
1887	91	77	58	76	64	84	95
1888	93	81	61	77	66	83	93
1889	95	81	70	77	74	81	96
1890[2]	92	81	83	82	90	89	101
1891[1]	97	78	80	82	82	85	105
1892[1]	93	75	74	79	80	85	104
1893[1]	92	75	69	78	75	85	103
1894[1]	83	69	71	74	86	89	107
1895[2]	80	66	78	72	98	90	108
1896	79	71	62	74	78	94	103
1897	80	70	63	73	79	91	103
1898	83	67	68	72	82	87	107
1899	81	73	77	76	95	94	104
1900[2]	82	84	108	85	132	104	105
1901[1]	84	79	90	84	107	100	108
1902[1]	85	77	81	80	95	94	105
1903[2]	85	81	80	82	94	96	101
1904	84	83	78	84	93	100	100
1905	87	82	80	85	92	98	103
1906	87	91	85	89	98	102	97
1907[2]	91	95	94	94	103	103	99
1908[2]	93	85	88	93	95	100	107
1909	96	86	82	90	85	94	102
1910	98	100	86	93	88	95	92
1911	97	96	86	96	89	99	100
1912	102	96	93	97	91	95	101
1913[2]	100	100	100	100	100	100	100
1914	107	95	96	100	90	93.5	105
1915	131	100	116	106	89	81	105

1916	154	145	158	132	103	86	91
1917	209	195	181	168	87	80	86
1918	242	242	211	241	87	100	100
1919	250	241	285	296	114	118	123
1920[2]	282	292	404	370	143	131	126
1921[2]	202	158	194	293	96	145	185
1922	157	134	144	217	92	138	162
1923	149	141	173	195	116	131	138
1924	151	155	167	196	111	130	127
1925	156	157	151	193	97	124	123
1926	148	131	143	179	97	121	136
1927	143	125	137	166	96	116	132
1928	141	126	126	165	89	117	131
1929[2]	139	122	123	163	88	117	134
1930[1]	121	99	137	157	113	130	158
1931[1]	99	73	103	141	104	142	194
1932[1]	92	70	100	128	109	139	182
1933[2]	85	71	101	124	119	146	175
1929[3] [4]	114	121	104	105	91	92	81
1930	100	100	100	100	100	100	100
1931	81	74	90	89	111	110	120
1932	76	69	88	82	116	108	119
1933	71	70	85	81	120	114	116
1934	72	76	89	81	124	113	107
1935	76	78	91	85	120	112	109
1936	79	83	96	86	122	109	104
1937	89	98	110	93	124	105	95
1938	87	87	110	96	127	110	110

(*) Source: W. Schlote, *Entwicklung und Strukturwandlungen des englischen Aussenhandels von 1700 bis zur Gegenwart.*

(†) Years of cyclical depression are marked [1], the peaks and troughs of the trade cycle are marked [2]. For years before 1913 cycles as given by Mitchell from Thorp's *Annals*. From 1922-1933 cycles as indicated by Board of Trade index of production except for 1926.

[3] Average Value indices derived from data in the *Board of Trade Journal* (1930 = 100).

[4] Export Price indices throughout refer to Exports of U.K. produce. Import Price indices in the series derived from Schlote refer to Total Imports; in the series derived from the Board of Trade they refer to Retained Imports.

There were, however, three trade cycle periods before the first world war when the British terms of trade changed in what is usually regarded as the normal fashion. In two of them—in the depression years 1883–1886 and at the end of the 1890–95 depression—there were sharp absolute and relative falls in food prices and, largely as a consequence, a rise in the terms of trade. The terms of trade also slightly improved in the short crisis of 1907–8, when the decline in the purchasing power of British manufactures and of British coal over foreign foodstuffs was offset by an increase in their purchasing power over foreign materials.

In contrast to imported foodstuffs British export goods showed a very pronounced price cycle. That this cycle coincided so closely with the trade cycle reflects, of course, the close connection between changes in the demand for British exports and changes in internal activity. As to the nature of this connection, it is significant that an expansion or contraction in the value of exports generally preceded by a few months the changes in internal activity,[1] and that fluctuations in exports to borrowing countries and in

[1] This was not the case in the 1907–8 crisis when domestic trade declined first (according to the turning point analysis of Thorp-Mitchell). Also there were two instances of a contraction in exports not followed by a decline in total trade activity; there were in 1896–7 and in 1911 when only the textile industry was affected. Cf. K. Zweig, Strukturwandlungen und Konjunkturschwingungen im englischen Aussenhandel der Vorkriegszeit. *Weltwirtschaftliches Archiv*, Band XXX (1929).

exports of heavy industrial products were leading. This is consistent with the hypothesis that changes in the demand for British exports generally initiated the trade cycle, and that they frequently followed from a change in expectations with regard to the profitability of foreign investment. The main point in the present context, however, is that very soon the expansion or contraction in the demand for British exports had an effect on export prices prices (and not only on volumes). In certain sections of the export trade this price effect was very marked. This applies particularly to the export prices of coal and of iron and steel, as is seen in Chart III (taken from Silverman).[1] Textile exports, which in Silverman's total index number received a weight[2] of about 47 per cent, fluctuated much less in price because of the lower amplitude of the cyclical changes in the demand for textiles.[3] But the heavy industrial group with a weight of about 37 per cent (including coal) in the price index of total exports was important enough to influence strongly the movements of the terms of trade. Their improvement in three prosperity or boom periods, namely at the beginning of the 'seventies, at the end of the 'nineties, and, to a lesser extent, at the end of the 'eighties, clearly resulted from the ruling famine prices of coal and of steel coinciding with relatively low food import prices. This was the period when the British export industries, though they had lost their lead in world manufacturing, still occupied a preferred position on account of Britain' strength as a lender. Cyclical changes in lending and in world economic activity, therefore, found an immediate reflection in the demand for British investment goods. It was their supply rather than the supply of food which proved inelastic in the short period, so that a major expansion carried with it a sharp increase in marginal costs (and/or an increase in prices relative to costs) while a contraction lowered them.[4] The combination of this with relatively small fluctuations in food import prices explains the heterodox cyclical behaviour of the British terms of trade before 1914.[5]

A different set of conditions determined the terms of trade of the United States. These displayed in the short period greater irregularity than the British, and it is difficult indeed to discover any distinct tendency, at least before 1914, in the direction of their change during the trade cycle. No doubt this is partly due to the nature of U.S. business fluctuations, *i.e.* to the frequency of ups and downs which in the early period were usually connected with crop conditions. But there were more general influences originating in the characteristic make-up of U.S. foreign trade (see Table V).

[1] Cf. A. G. Silverman, Index Numbers of British Export and Import Prices, 1880–1913, *Review of Economic Statistics*, 1930.

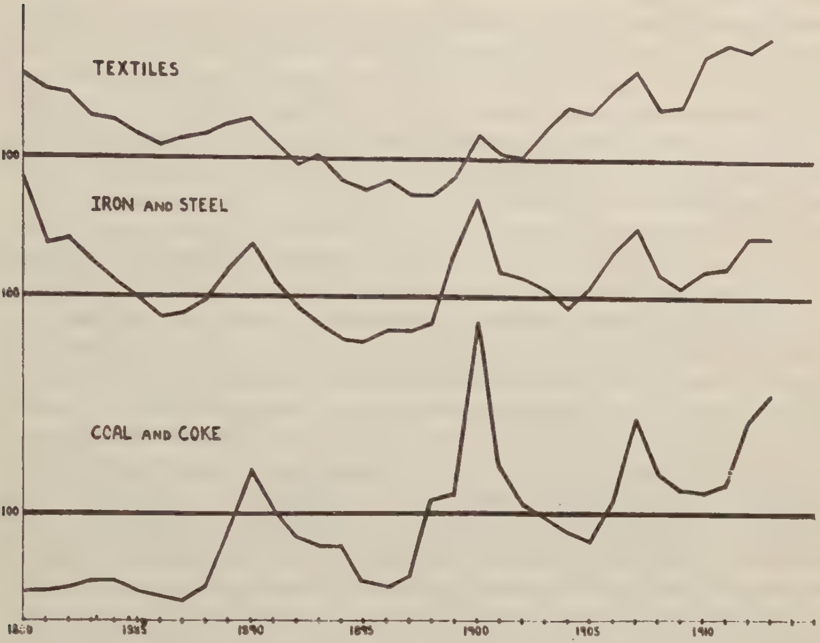
[2] Weights derived from the average monthly quantities traded 1890–1904.

[3] Cf. Zweig, l.c., p. 321. The rise in textile export prices after 1900 was partly determined by the sharp increase in the price of imported textile materials.

[4] See W. W. Rostow, l.c., particularly Chapter II; also the qualifying remarks in footnote 1, p. 381.

[5] The fluctuations in the British terms of trade between 1910 and 1912, which have a parallel in similar fluctuations in France and Germany, can be traced back to the isolated recession in the United States.

CHART III. INDICES OF WHOLESALE EXPORT PRICES FOR THE U.K. (1880–1904=100)



Scale of Chart
%
20—
10—
0—

Source: Silverman, *Review of Economic Statistics, 1930*

TABLE V

Composition of U.S. Foreign Trade, 1870–1938

Yearly averages	*Per cent of Total Exports* Crude materials	Crude foodstuffs	Semis & finished goods	*Per cent of Total Imports* Crude materials	Crude foodstuffs	Semis & finished goods
1871–1875	45	15	40	16	14	70
1881–1885	34	21	45	20	15	65
1891–1895	34	17	49	24	19	57
1901–1905	30	12	58	33	13	54
1910–1914	33	6	61	35	12	53
1923–1925	29	7	64	38	11	51
1936–1938	23	5	72	31	14	55

The composition of U.S. exports changed very rapidly after the beginning of the 'seventies when the greater proportion—about 60 per cent by value—consisted of primary products. In the 'eighties and early 'nineties exports were divided about equally between manufactures and semi-manufactures on the one hand, and foodstuffs and raw materials on the other. From then on industrial products, including semis, became more and more predominant. These changes are obviously very relevant in a study of the U.S. terms of trade. Yet the fact that U.S. exports were mainly agricultural up to about 1890 and mainly industrial in the inter-war period does not seem to be of great help when it comes to interpreting short-term fluctuations. Before 1914 the U.S. terms of trade showed no uniform cyclical pattern,[1] while after 1919 there was at least one trade cycle period, namely 1925–29, when they followed the course typical for primary producers, although two-thirds of the value of U.S. exports then consisted of manufactured and semi-manufactured goods.

These irregularities can be shown to have resulted from one principal fact in respect of the composition of U.S. imports (as compared with exports). It is striking that the division of imports as between the two main groups of commodities has remained virtually unaltered since the late 'eighties. At that time about 40 per cent of the value of total U.S. imports consisted of primary commodities. These products were a very substantial component of imports as well as of exports—a composition of trade not usually found in countries at a comparable stage of industrial development. In later periods also, when the relative importance of agricultural exports had further declined, U.S. foreign trade continued to consist to a very large extent in the exchange of primary products against primary products. Moreover, although the total export list and import bill were made up of a great variety of goods, a very limited number of items—all of them primary products—accounted for a high proportion of the totals. This was especially so before 1914 when grains and cotton constituted about 45–60 per cent of total exports, while sugar and coffee formed about 10–20 per cent of imports. As a consequence the index numbers of the unit values of U.S. exports, as calculated for the period up to 1914 by T. J. Kreps, fluctuated up to 1889 with minor exceptions in the same direction as the prices of grains and animal foodstuffs,[2] and from 1889–1913 in the same direction as cotton prices; while the index of the unit value of imports followed according to Kreps changes in sugar and coffee prices. These commodities are probably over-weighted in the calculation of the index numbers, but if we take them as they stand—no other indices are available—most movements of the U.S. terms of trade appear to have been associated with the price movements of the commodities mentioned. Each of these commodities showed in the period up to 1913 more or less erratic fluctuations, that is, fluctuations which were not synchronous with, or entirely conditioned by, cyclical fluctuations in demand, but which were strongly co-determined by local peculiarities of climate and soil, given the high degree of concentration of these crops (particularly of cotton and coffee) in a few producing areas. In view of the weight of these commodities in U.S. foreign trade and in the index numbers used, the irregular behaviour of the U.S. terms of trade before the first world war is understandable. Long-run changes in the U.S. terms of trade may also be related to these factors, for example their strong improvement in the period from the close of the nineteenth century to 1914. The rise at that time in the unit purchasing power of primary products would not have brought about this improvement had it not been that the prices of those primary goods which are important items on the U.S. export list—notably cotton[1]—rose far more than the prices of the commodities—sugar, coffee and colonial produce in general—which the United States imported in large quantities. Both short-run and long-run fluctuations in the index number of the U.S. terms of trade were largely determined before 1914 by the conditions under which the United States exchanged primary products for primary products.

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[1] They reached a maximum in four out of eight periods of cyclical prosperity and a minimum in two out of seven periods of recession. See Chart I.

[2] More precisely they moved with the unweighted average of Silverman's group indices for the British import prices of grains and animal foodstuffs.

The peculiar shape of the U.S. curve in the years 1925–29 (see Chart II) can be explained in a similar way. As this short period is also instructive for other reasons, we shall now turn to it. The broad recovery movement from 1922 to 1929 was characterised by an increase in the prices of primary products relatively to manufactures, a development which was in line with ' normal ' cyclical expectations. In consequence the terms of trade of the industrial (agricultural) countries tended to deteriorate (improve) over this period. But these movements occurred almost entirely in the first few years, from 1922 to 1925; in 1925–6 a minor break, followed by rather irregular tendencies, interrupted the cyclical price trends. At that time there was a fairly steep price fall in nearly all primary markets, which was not associated with a similar fall in the prices of manufactured goods. The fact that price and volume curves of primary products showed a negative correlation in these years, when the consumption of most raw materials continued to expand without a break, indicates that the price fall was set in motion mainly by forces operating on the supply side.[2] Neither in industrial nor in primary producing countries was there a pause or a reversal in the cyclical increase in income.[3] But the terms of trade were of course affected : in 1925 and 1926 they rose in the industrial countries and fell in the others; in the subsequent years up to 1928–9 a readjustment took place, when the price fall of primary products (relatively to manufactures) was halted and *on the average* slightly reversed. This moderate price recovery did not preclude, however, the continuous decline in the purchasing power of a number of primary products, and we find therefore a deterioration in the terms of trade of certain primary producing countries throughout the prosperity years from 1925 to 1928–9.[4]

The developments from 1925 to 1928 which we have just sketched out do not agree with the ' normal ' expectation that the terms of trade of primary producers will improve in an upswing. This ' normal ' rule is based on the assumption that the quantum elasticity of primary production is relatively small in the short period. But the trade cycle period is clearly ' long ' enough to permit extensions of productive capacity and changes in technique (*i.e.* shifts in the supply curve) which make it possible to increase supplies without increasing costs and prices.[1] Such a shift actually became effective during the upswing of the 'twenties, when cost reductions resulting from innovations and locational shifts cheapened primary products relatively to manufactures.[2] There was nothing abnormal about this development.

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[1] Cf. footnote 3 on p. 384 of this article.

[2] For this there is plenty of evidence relating to individual commodities. Typical examples will be found in Schumpeter, *Business Cycles* ; cf. also the productivity and cost indices for U.S. mineral production 1919–1938 given by Spurgeon Bell, *Productivity, Wages and National Income*, pp. 65–67 and App. E. During the 'twenties unit wage costs in U.S. mineral industries were reduced proportionately much more than in U.S. manufacturing.

[3] Cf. the indices of economic activity in borrowing (mainly primary producing) countries given by the Chung Chang, The British Balance of Payments 1924–1938, *Economic Journal*, December 1947, p. 484. There was a minor decline in 1926 in German and British industrial activity, but this was more than offset by the industrial expansion elsewhere. Moreover, in the case of Great Britain the contraction in output, which was reflected in exports, did not interrupt the rise in the demand for primary imports.

[4] See the terms of trade of the Netherlands Indies in Chart II ; also our note on Japan.

The seemingly irregular tendencies which the movements in the terms of trade of the various countries displayed in the middle of the 'twenties can be explained, therefore, by reference to the changing price ratios between the two main groups of commodities, and by price divergences within the groups. The causes of the peculiar behaviour of the U.S. terms of trade from 1925 to 1929, however, are less obvious. Generally they moved in the trade cycles after 1919 in the same direction as the terms of trade of other industrial countries. But from 1925 to 1929 their course was different: they continued to fall rather steeply in 1925 and 1926, when in other industrial countries there was a rise, and they improved substantially between 1927 and 1929 when in other industrial countries there was a slight deterioration.

Why this was so becomes clear upon a closer analysis of the group indices which are combined in the indices of the unit value of total U.S exports and imports (see Table VI). When in 1925–6 commodity prices generally fell, the primary exports of the United States—wheat and especially cotton —fetched lower prices; but it so happened, that is, the conjunction of supply and demand was such, that the prices of the materials which the United States imported remained virtually stable. The reverse movement occurred in the years 1927 to 1929. As a result of the rise in cotton prices and in the prices of other primary commodities produced for export,[3] the unit value of total U.S. exports showed a slight increase in spite of the decline in the unit value of manufactured exports.[4] At the same time there was a fairly sharp

[1] ' It is a clear lesson of economic history . . . that the long period, in the Marshallian sense, can be very short indeed.' W. W. Rostow, l.c., p. 53.

[2] The fall in the prices of primary products in 1925–6 has been attributed by various authors to the sudden decline in international lending at the time. F. Hilgerdt, for instance, refers to this coincidence in order to illustrate the direct causal link which according to him exists between foreign investment and the cyclical changes in the terms of trade. (Cf. F. Hilgerdt, Foreign Trade and the Short Business Cycle, in *Economic Essays in Honour of Gustav Cassel*). But the fact that the strong re-expansion of capital exports between 1926 and 1929 had very little effect on raw material prices, or on their purchasing power over manufactures, and that they continued to display very irregular tendencies, does not seem to be consistent with this explanation. We shall return to this subject later. Cf. also the criticism by Ch. P. Kindleberger, *International Short-term Capital Movements*, pp. 145 ff.

[3] Wheat was the only major exception, but the fall in the wheat price in the years up to 1929 was not very significant. Moreover, wheat exports showed a declining importance after 1927 in the total volume of U.S. exports.

[4] Among these exports motor cars gained from year to year in importance; their export prices were reduced in some proportion to the very substantial fall in unit wage costs in the U.S. motor car industry in and after 1927. Cf. Spurgeon Bell, l.c., Chapter VI, particularly pp. 100–104.

fall in the prices of such commodities as sugar, tin, rubber, silk, wood-pulp and newsprint, which have a large weight in U.S. imports.

TABLE VI

Unit Value Indices of United States Imports and Exports (1923–1925 = 100)

Year	Exports				Imports			
	Crude materials	Crude foodstuffs	Finished manufactures	Total	Crude materials	Crude foodstuffs	Finished manufactures	Total
1922	85	85	105	94	80	82	96	84
1923	108	85	101	101	95	82	99	99
1924	101	100	99	99	92	98	96	96
1925	91	115	100	100	113	120	104	105
1926	70	99	101	92	112	119	99	102
1927	69	99	91	86	94	111	95	95
1928	78	93	90	88	86	120	100	92
1929	76	89	89	87	80	113	91	87

These divergent price tendencies in a relatively small number of items fully account for the seemingly anti-cyclical behaviour of the U.S. terms of trade. The divergences in certain years seem to have been connected with the influence which U.S. buying and selling itself had on prices. That this was a factor of some importance, for instance between 1922 and 1926, is suggested by a comparison between U.S. and U.K. import prices.

From 1922 to 1926 there was a persistent tendency, interrupted only in 1924, for U.S. import prices, especially of foodstuffs and of raw materials, to rise both absolutely and relatively to the British. The widening gap between the U.S. and the British terms of trade mainly resulted from these movements which are shown in the Table VII (for the terms of trade movements see Chart II).

TABLE VII

U.S. and U.K. Import Prices (Average Values). (1922=100)

	U.S. Import Prices			*U.K. Import Prices*					
				Sterling Prices			*Gold Prices*		
	Crude Foodstuffs	Crude Materials	Total	Food	Raw Materials	Total	Food	Raw Materials	Total
1922	100	100	100	100	100	100	100	100	100
1923	100	119	118	95	105	98	98	108	101
1924	120	115	114	96	116	99	96	116	101
1925	146	141	125	99	117	98	108	128	107
1926	145	140	121	94	98	90	103	108	99

By the middle of the 'twenties the total volume of U.S. imports had increased by about 60–70 per cent compared with 1913, while British imports had risen by only about 10 per cent. The share of the total world supply, which was absorbed by the United States, had thus become rather heavy in the case of a number of products.[1] Variations in U.S. demand, therefore, had a sufficient weight to affect prices and even terms of trade movements. This seems confirmed by the course of events in 1924. The U.S. recession in 1924, which was not accompanied by recessions elsewhere, led to a fall in U.S. import prices relatively to British, because of the decline in the U.S. demand for a number of commodities of which the bulk was regularly sold in the U.S. market. In consequence the gap between the U.S. and the U.K. terms of trade narrowed in 1924. But while in this case the change in price ratios was related to cyclical conditions, many of the changes which so frequently arose in the U.S. exchange of primary products for primary products had little to do with cyclical fluctuations in demand. Very often they arose from crop variations or from other irregular changes in supply.

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[1] Thus U.S. consumption (or imports) of rubber, raw silk and tin amounted in 1913 (or 1911–15) to 43 per cent, 47 per cent and 35 per cent of the world production of these commodities. By 1926 the U.S. share of the total supply had risen to 64 per cent, 69 per cent and 52 per cent respectively.

A study of the cyclical fluctuations in the terms of trade is not complete unless it covers differences in the rates of change as between different countries. Some observations on this point will be contained in a second article which will also deal with the effects of capital exports and the relation beween the terms of trade and volumes of trade. The main conclusion of the present analysis may be summed up as follows. We found no great regularity in the movements of the terms of trade during the trade cycles from 1870 to 1938. The ' normal ' expectation that the terms of trade of industrial countries will improve in depression and deteriorate in prosperity is based on a number of assumptions which frequently are not fulfilled ; nor is there any reason why they should always be fulfilled. Where a relatively small number of items dominates the export or the import list, price movements of these commodities will be decisive; and these may not be strictly conditioned by cyclical changes in demand. Moreover, the elasticity of supply of manufactures is not necessarily higher in the trade cycle than that of primary products. Even if the British experience of the late nineteenth century is regarded as being of little relevance to present day conditions, there is still the possibility that shifts in the long period supply curve will occur during the trade cycle, and that these may affect the terms of trade in a manner not consistent with the ' normal ' rule.

K. MARTIN.
F. G. THACKERAY.

APPENDIX A

DERIVATION OF INDICES OF TERMS OF TRADE

The indices refer to variations in the rate of exchange of merchandise exports against merchandise imports. Most of the prices employed are of the average unit value type, obtained by dividing the total value of each item of trade by the number of units traded. The alternative is the use of wholesale price indices. .The latter has the advantage of greater certainty that the price of the same or a corresponding quality of each good is being considered on each occasion. It also has many disadvantages. The sampling may be unrepresentative or may become so; for export prices this method takes no account of possible differential pricing, and for import prices it includes the effects of duties and of post-importation costs.

The average unit value method is often affected by changes in the official classification of goods, or by changes in the quality or nature of the goods actually traded. For example, the price-level of 'special'[1] exports from the U.K. in 1924 on 1913 base was estimated by the Committee on Industrialisation and Trade[2] to be 190. The Committee estimated that if allowance were made for quality changes, this index would have been 180.

Other limitations on the meaning of the indices arise in connection with methods of weighting, with the use of chain or fixed base indices, and with the extent of the coverage and representativeness of indices. Error is also introduced by the successive rounding off of figures. In general, the indices nevertheless provide a fair indication of the extent of change from one year to the next and of the relative percentage changes as between different countries. Except very broadly, however, it is difficult to make long-term comparisons. Also it is impossible to compare the absolute levels of the indices of different countries, since they depend upon the relative import and export prices in the base-years. Even for legitimate comparisons, isolated movements of the indices of less than 3–4 points may usually be ignored.

Long-term trends and large fluctuations of the indices may nevertheless generally be associated with other economic changes, as is done in the text.

Sources :

(i) *Price Indices* 1923–1938. The sources and derivation of the Australian indices are given below for the whole period 1870–1938. The remainder of the price indices used for the period 1923–1938 are those given in the League of Nations *Review of World Trade* 1938, where the original sources and methods of derivation are quoted.

Note : (*a*) The price indices for the U.K. refer to Total Imports and Total Exports. Re-exports constituted about 15 per cent of total U.K. exports in 1920–1929, and their price index was in most years lower than the price index for special exports. (*b*) The import price indices for the U.S.A. refer to f.o.b. prices, whereas all other import price indices used refer to c.i.f. prices. This probably had little influence on relative changes in the index of U.S. import prices.

(ii) *Price Indices* 1870–1913.

United Kingdom. Source : W. Schlote, *Entwicklung und Strukturwandlungen des englischen Aussenhandels von* 1700 *bis Gegenwart.* Indices refer to General Imports and Special Exports.

U.S.A. Source : T. J. Kreps, Note on Import and Export Prices in the U.S.A. . . . 1880–1914, *Quarterly Journal of Economics*, August 1926. Method: Fixed base indices weighted by the average of previous year and current year quantities. Export prices used were wholesale market prices in the markets from which the good in question was principally exported. Import prices used were average unit values, f.o.b. Prices taken of 28 export items representing 40–45 per cent of the total exports, and 29 import items representing 30–40 per cent of the total imports.

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[1] *i.e.* exports of U.K. produce and manufactures, excluding re-exports.

[2] *Survey of Overseas Markets*, pages 4 and 11.

Germany. Sources : Beveridge, Mr. Keynes's evidence for over-population, *Economica* 1923–24, No. 10, Page 10, for export prices indices. Beveridge's index refers to manufactured exports; fixed base with current year quantity weights; average unit values. The index for German Food Import prices also given by Beveridge is dominated by grain prices, and is not representative of German imports as a whole. The British import price index given by Schlote (op. cit.), has therefore been preferred, although for the German case food prices are thus over-weighted.

Australia. (*a*) 1870–1930. Source : R. Wilson, *Capital Imports and the Terms of Trade*. Method, 1870–1901 : The indices are for New South Wales only but may be regarded as representative for Australia as a whole. They are taken from Coghlan, *The Wealth and Progress of New South Wales*. Fixed base indices with current year quantity weighting. Presumably unit values are used. Method, 1901–1930 : The export price index is for Australia as a whole as given in the Australian *Year Book*. It has fixed base, with weights based on the average quantities exported 1897–1916. Average unit values. The Import Price index is the index of the prices of the ' Imported Goods ' group of the Sydney wholesale prices index. Fixed base, with weighting by the average quantities consumed in New South Wales 1911–13. About 40 per cent of the goods imported into New South Wales are covered. Tariffs included but practically constant 1901–30. Also post-importation costs included. Use of this index to represent import prices is probably fairly satisfactory, but too much significance cannot be attached to its detailed movements. Practically no finished manufactures taken into account.

(*b*) 1930–38. Source : Clark and Crawford, *National Income of Australia*. Method : Source gives figures of the value of exports at 1923–27 average prices, which are derived from the indices given in the Australian Year Book, constructed as for 1901–30. The Import Price index is the ' non-rural goods ' group index of the Sydney wholesale price index, given by source in the form of value of imports at 1923–1927 average prices. A ' sales tax ' in 1930, and numerous tariff changes, are included in the prices used. The representativeness of this latter index is very uncertain.

APPENDIX B

Tables I and II. The productivity indices used are as follows :—

(i) *U.K.* Up to 1911 from Colin Clark, *Conditions of Economic Progress.* Averages centring on Census of Population years. Production at constant prices for 48 hour week. Covers Manufacturing and Mining.

For 1924 and 1935 from Rostas, *Report on International Comparisons of Productivity* (unpublished). Refers to year given only. Production per man-hour. Covers building and public utilities as well as Manufacturing and Mining. Comparison of Rostas indices for 1924 and for 1935 gives same increase between the two dates, 27 per cent, as comparison for the same two years of separate index of productivity in Manufacturing only, also givenby Rostas.

(ii) *U.S.A.* (*a*) Agricultural Productivity. From Barger and Landsberg, *American Agriculture.* Five-year centred averages. Output per worker.

(*b*) Mining. Up to 1910 from M. Ezekiel, Population and Employment, *Annals of the American Academy of Political and Social Science*, November 1936. Based on employment and production data for years ending in 0 and 9. Productivity per worker. For 1935 from Barger and Schurr, *The Mining Industries* 1899–1939. Production per man-hour. Refers to year given; but figure for productivity exclusive of oil and gas-wells is an average centred on 1935.

(*c*) Manufacturing. From M. Ezekiel up to 1910. Based on employment and production data for years ending in 0 and 9. Production per worker. For 1924 and 1935 from Fabricant, *Employment in Manufacturing* 1899–1939. Averages centring on year given. Production per man-hour.

The wage-rate indices used are as follows :—

(i) *U.K.* From A. L. Bowley's *Wages and Income in the U.K. since* 1860, page 30. Index for 1880 is for year given. Remainder of figures are averages centred on 1891, 1901, 1911, 1924 and 1935.

(ii) *U.S.A.* (*a*) Agriculture. From BULLETIN No. 491 of the *U.S. Bureau of Labor Statistics* and from *Statistical Abstract* for the U.S.A. for 1938. Figures are either averages centred on year given or may reasonably be regarded as such.

(*b*) Mining. The general index for workers in all occupations excluding agriculture is used (see under Manufacturing), as no general index for mining wages over the whole period was available. Use of this index biases the results against the conclusions drawn in the text, that mining wage-costs moved differently from manufacturing wage-costs.

(*c*) Manufacturing. Up to 1924 index is for workers in all occupations excluding agriculture given in BULLETIN No. 616 of the *U.S. Bureau of Labor Statistics.* Averages centred on year given. For 1935 index is a weighted average of hourly earnings in 25 manufacturing industries given in *Statistical Abstract* for the U.S.A., 1938.

The Wage-Cost indices given in Table I are derived from the above indices as the ratio of wage-rate indices to productivity indices. The indices for the U.K. for years ending in 1 are attributed to years ending in 0. Wage-cost indices in footnote to Table are adjusted for variations in exchange values of currencies by use of coefficients of conversion given in League of Nations' Memorandum on *International Trade and Balances of Payments* 1927–29, and *Review of World Trade* 1938.

Table II. The wage-cost index for the U.S.A. is a weighted average of wage-cost indices for agriculture and manufacturing. Weights are the percentages given in *Statistical Abstract* for the total value of exports of U.S. produce under the headings : crude foodstuffs and crude materials; manufactured foodstuffs, semi-manufactures and finished manufactures. The wage-cost index for mining is excluded since in 1903 mining provided only 2 per cent of the total value of exports of U.S. produce (*Statistical Abstract* for the U.S.A., 1903).

The export price indices are averages centred on year given. The conversion coefficients used to adjust these indices to a gold price basis are from the sources quoted above.

TABULAR APPENDIX.

EDITORIAL NOTE

Tables comparing the broad trends of production, prices and wages, the volume of foreign trade and the supply of coal for a number of European countries, the United Kingdom and the U.S.A. are given below. For some countries more up-to-date figures are available than for others. These time lags will, it is hoped, be reduced in future and the tables will be extended when more information becomes available. This index numbers are based as far as possible on 1938.

Explanation of symbols :

... the figure is not available.
(—) figures provisional or approximate.
— figure is negligible.

TABLE I. *Industrial Production* (*or Employment*)
Index Numbers 1938=100

Index Numbers	Monthly Averages				1948				
	1939	1945	1946	1947	May	June	July	Aug.	Sept.
Industrial Production[1]									
U.S.A.[2] ...	122	228	191	210	216	216	209	215	215
United K.[3]	104[13]	...	100	108	118	124	112	110	124
France[4] ...	...	46	81	95	115	113	106	97	104
Belgium ...	107	38	88	105	117	106	102	104	...
Netherlands ...	111	30	73	92	105	116	115	105	...
Denmark ...	105	74	101	112	123	121	120	120	121
Sweden ...	106	91	110	111	115	115	114	114	...
Norway[4] ...	107	69	100	115	139	134	81	124	...
Finland[5] ...	...	52	70	86	(110)	(110)	...	...	...
Poland[6] ...	...	...	79	104	139	135	...	...	...
Bulgaria ...	106	...	122	141	158	173	177	...	...
Italy[7]... ...	...	...	54	70	73	75	75	72	...
Germany[8] ...	...	...	34	40	47	51	62	65	70
Austria[9] ...	...	...	...	61	90	99	98	104	...
Industrial Employment :									
Switzerland[10]	98	110	123	134	...	137	...	...	136
Czechoslovakia[11]	...	...	89	95	109	109	109	...	...
Great Britain[12]	100	100	97	104	106	106	106	107	107

Sources : Official Statistics. For *Belgium* : Institut de Recherches Economiques et Sociales, Louvain ; for *Sweden* : Sveriges Industriförbund ; for *Finland* : Unitas ; for *Germany* : Control Commission (British Element) ; for *Italy* : Confederazione Generale del' Industria Italiana ; for *Austria* : Monatsberichte des Oest. Institutes für Wirtschaftsforschung.

[1] Mining and Manufacturing, except Denmark (manufacturing only), and Netherlands (mining, manufacturing and public utilities) ; see also Note 3.

[2] Adjusted for seasonal variations.

[3] Interim Index of industrial production (mining, manufacturing, building and public utilities) 1946=100.

[4] Adjusted for number of working days. [5] Total (export and home) industry.

[6] New series. [7] 1938=100. [8] Bizonal Area. 1936=100.

[9] Revised series. Industrial key materials and consumers' goods industries. 1937=100.

[10] Wage earners employed in manufacturing and building. Quarterly figures.

[11] Total employment in manufacturing, mining and building, 1937=100.

[12] Employment (including employers and self-employed) in manufacturing. June 1939=100 ; all annual figures refer to June. [13] 1938.

TABLE II

Wholesale Prices[1]

Index Numbers : 1938=100

Index Numbers		Monthly Averages 1939	1945	1946	1947	1948 April	May	June	July	Aug.	Sept.
U.S.A.	a[2]	98	135	154	193	207	209	211	215	216	(214)
U.K.	a	101	167	173	189	216	217	219	219	218	217
	b[3]	91.5	138	142	155	178	179	180	180	180	179
France	a	105	375	648	989	1555	1653	1691	1698	1783	1791
	b	92	(275)	189	289	252	268	274	275	288	290
Holland	a	102	177	245	266	273	273	274	273	274	...
	b	99	(122)	169	183	186	186	187	186	187	...
Switzerland ...	a	104	206	201	209	219	218	218	217	216	215
	b	103	...	204	213	223	222	222	221	220	219
Sweden	a	103	174	168	179	192	193	195	194	195	...
	b	98	...	173	199	212	213	215	214	215	...
Denmark	a	105	190	187	207	221	226	229	230	231	231
	b	98	...	180	198	210	216	218	219	220	220
Norway	a	102	177	169	175	181	181	182	182	181	181
	b	97	...	138	144	148	148	149	149	148	148
Finland	a	106	386	605	724	950	960	971	990	985	984
	b	98	...	207	248	324	327	331	338	336	336
Czechoslovakia ...	a	115	173	295	313	322	323	326	334	335	336
	b	114	...	170	181	185	186	187	192	193	194
Italy	a	...	...	...	5158	5241	5185	5142	5139	5704	...

[1] Prices expressed in national currencies and in U.S. dollars at official rates.
[2] a=in national currency. [3] b=in U.S. currency.

TABLE III. *Wages*

Index Numbers[1]	Monthly Averages 1939	1945	1946	1947	1948 Feb.	Mar.	Apr.	May	June	July
U.S.A.[2]	101	163	173	195	205	206	206	207	210	212
United Kingdom[3] ...	...	149	161	168	174	175	175	175	176	176
Switzerland[4] ...	100	146	160	174	...	180	...	...	181	...
France[5]	...	328	448	525	...	724	726	...	728	730
Netherlands[6] ...	100	131	163	168	175	175	175	175	175	...
Czechoslovakia[7] ...	100	182	304	314	317	317	317	317	317	...

[1] Base periods : U.S.A. and France : 1938=100 ; United Kingdom : September 1939=100 ; Switzerland : January–August 1939=100 ; Netherlands : 1938–9=100 ; Czechoslovakia : March 1939=100. [2] Average hourly earnings in manufacturing. [3] Weekly wage rates ; Ministry of Labour (all industries). [4] Hourly rates in industry ; quarterly figures. [5] Hourly rates for men in Paris. The annual figures refer to October. For 1948 hourly wages of metal workers (' manoeuvres ordinaires ') in the Paris region.
[6] Hourly rates in industry. [7] Hourly rates in manufacturing.

TABLE IV. *Foreign Trade* Volume Index[1]

Index Numbers		Monthly Averages 1939	1945	1946	1947	1948 Apr.	May	June	July	Aug.	Sept.
U.S.A.	Imports	114	130	139	133	134	140	155	143	149	...
	Exports	105	183	191	255	209	206	189	188	185	...
U.K.	Imports	97	62	69	77	...	...	81[2]	...	...	82[2]
	Exports	94	46	99	108	...	...	134[2]	149	133	132
France	Imports	88	34	112	117	...	...	...	...	...	...
	Exports	99	10	43	82	...	...	...	...	...	...
Switzerland ...	Imports	118	31	105	147	166	151	156	141	127	118
	Exports	97	57	101	115	123	121	126	123	116	125
Denmark	Imports	98	21	86	82	88	63	79	...	...	...
	Exports	101	32	60	68	57	59	58	...	...	...
Sweden	Imports	117	30	94	124	...	...	123[2]	...	...	...
	Exports	108	50	66	73	...	...	87[2]	...	...	...
Norway	Imports	111	46	78	117	100	94	101	85	92	...
	Exports	108	19	61	81	93	82	88	65	72	...
Italy[4]	Imports	...	...	40	75	...	...	...	...	...	...
	Exports	...	...	30	54	...	...	...	...	...	...
Poland	Imports[3]	...	97[5]	159	128	155	145	151	...	...	...
	Exports	...	17[5]	34	55	96	87	92	...	...	...
Czechoslovakia[6] ...	Imports	...	...	35	77	...	95[7]	...	...	...	...
	Exports	...	...	26	56	...	76[7]	...	...	...	...
Hungary	Imports	...	1	15	48	65	78	59	55	52	64
	Exports	...	...	15	27	38	69	42	33	30	33
Austria[6]	Imports	...	...	...	24	43	42	47	50	...	...
	Exports	...	...	...	29	49	52	52	58	...	...

[1] Deflated Values (1938=100) [2] Average of quarter. [3] Incl. U.N.R.R.A. deliveries.
[4] 1935=100. [5] Monthly average of 3rd and 4th quarter. [6] 1937=100.
[7] Quarterly figures ; corresponding quarter of 1937=100.

TABLE V. *Production of Steel (Ingots and Castings)*

Thousand metric tons	Monthly Averages 1937	1938	1946	1947	1948 Apr.	May	June	July	Aug.	Sept.
U.S.A.	4282	2400	5035	6410	5641	6858	5681	6413	6747	6726
Great Britain ...	1101	881	1074	1057	1195	1191	1509[1]	943	1101	1507[1]
France	660	518	367	479	652	597	616	641	607	549
Belgium	322	190	190	241	337	306	240	317	351	352
Luxembourg ...	209	120	108	143	201	183	209	198	218	222
Sweden	94	83	101	99	119	96	104	64	89	119
Poland	122	120	102	132	164	148	...	...	...	...
Czechoslovakia ...	192	153	139	190	233	220	225	216	211	219
Hungary	55.4	54.0	29.4	49.7	66.0	60.9	63.9	...	...	...
Italy	175	194	96	142	184	181	194	166	...	...
Austria	54.1	...	15.6	29.7	49.6	42.4	59.2	62.3	60.9	57.9
Germany										
Bizone[2] ...	1353[3]	...	248	296	432	384	445	547	610	675
French Zone ...	...	...	25	63	92	95	105	122	...	...

Source : U.N.O. Monthly Bulletin and other official statistics.
[1] Five weeks. [2] Including iron castings. [3] 1936.

TABLE VI. *Coalmining and Supplies*

A. Hard Coal Output
Monthly Figures or Averages[1]

Million metric tons ...	Average 1946	Average 1947	1948 Mar.	1948 Apr.	1948 May	1948 June	1948 July	1948 Aug.	1948 Sept.	As % of m. av. 1937
U.S.A.[2]	44.9	51.1	35.2	35.4	55.7	52.3	48.1	53.7	50.4	...
United Kingdom ...	16.1	17.0	19.9[4]	17.3	16.0	21.3[4]	14.3	14.3	207[4]	108
West Germany[3] ...	4.5	5.9	7.2	7.0	5.9	7.4	7.8	7.5	7.6	66
France	3.9	3.8	4.3	5.1	4.7	5.0	5.0	4.6	5.0	102
Saar	0.7	0.9	0.9							
Belgium	1.9	2.0	2.3	2.3	2.1	2.3	2.0	2.2	2.3	94
Holland	0.7	0.8	1.0	1.0	0.8	0.9	1.0	0.9	0.9	75
Poland	3.9	4.9	5.8	5.8	5.0	5.8	6.1	6.0	6.1	110
Czechoslovakia ...	1.2	1.4	1.6	1.6	1.4	1.5	1.4	1.4	1.4	99

B. Total Imports of Solid Fuels including Bunkers (ton for ton). Monthly Figures of Averages

Thousand metric tons ...	Average 1946	Average 1947	1948 Mar.	1948 Apr.	1948 May	1948 June	1948 July	1948 Aug.	1948 Sept.	As % of m. av. 1937
France	867	1283	1448	1033	1298	1826	1964	1817	1500	60
Belgium	262	462	465	236	134	177	154	67	142	21
Holland	268	330	448	277	240	344	384	394	350	45
Luxembourg ...	154	187	221	242	218	216	302	282	250	80
Norway	157	203	182	187	160	154	225	218	192	67
Denmark	314	363	351	369	249	271	296	379	361	72
Sweden	287	495	553	539	587	674	709	574	482	65
Switzerland ...	128	210	242	259	225	267	207	192	185	64
Italy	471	749	813	452	564	809	971	724	743	69
Finland	68	132	49	185	290	292	254	203	(228)	...
Portugal	48	76	81	53	72	76	55	67	112	99

C. Exports of Solid Fuels excluding Bunkers (ton for ton). Monthly Figures or Averages.

Thousand metric tons	Average 1946	Average 1947	1948 Mar.	1948 April	1948 May	1948 June	1948 July	1948 Aug.	As % of m. av. 1937
U.S.A.	4105	5919	2968	1567	4932	5721	5142	...	416
Thereof to Europe[6] ...	1370	2811	2288	861	926	1711	1930	1745	...
U.K.	385	94	436	771	1039	1156	1377	1086	30
West Germany[3] ...	972	880	1517	1222	1155	1599	1676	1587	51
France	32	38	42	43	73	61	73	94	43
Saar[5] ...	119	115	27	38					
Belgium ...	78	172	128	93	137	139	120	95	18
Holland... ...	36	48	73	93	86	85	68	93	16
Poland ...	1277	1900	2350	2548	2400	2501	2732	2590	...
Czechoslovakia	55	131	188	256	256	245	257	260	61

Source : European Coal Organisation ; United Nations Monthly Bulletin of Statistics. Current Business (U.S.A.).

[1] Calendar months.

[2] Including a small quantity of lignite.

[3] British Zone.

[4] Five weeks : other months four weeks.

[5] Figures for 1946 and 1947 include exports to France.

[6] Reported arrivals of solid fuels in Europe from U.S.A.